National Health Service
Department of Health and Social Security

Steering Group on
Health Services Information

Chairman: Mrs E Körner

First Report to the Secretary of State

HMSO £5.95 net

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A report on the collection and use of information about hospital clinical activity in the National Health Service

London Her Majesty's Stationery Office

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First published 1982

ISBN 011 320816 2

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PREFACE

The NHS/DHSS Steering Group on Health Services Information was appointed by the Secretary of State for Social Services in February 1980 with the following terms of reference:

1. to agree, implement and keep under review principles and procedures to guide the future development of health services information systems;
2. to identify and resolve health services information issues requiring a co-ordinated approach;
3. to review existing health services information systems; and
4. to consider proposals for changes to, or developments in, health services information systems arising elsewhere and, if acceptable, to assess priorities for their development and implementation.

In this, the first in a series of reports, we present our conclusions and recommendations about the information required by management about clinical facilities and departments in hospital and the patients using them. As some clinical services, such as consultant out-patient clinics and maternity, are provided both in and outside the hospital, the Report also contains recommendations concerning the extra hospital component of the activity of these services.

The present Report will be followed in due course by reports on information about community services, paramedical services, manpower, finance, patient transport services, dental services and such other areas of interest as fall within our remit. We expect that these reports will fit together like a well made jigsaw, and will accurately reflect the information needed by management to perform the complex tasks of efficient administration, effective planning and genuine accountability.

Since the creation of the NHS in 1948 many knowledgeable and gifted individuals in the DHSS and the NHS have contributed ideas and skills to the creation of various data bases and advocated their exploitation, particularly in the hospital service. We gladly acknowledge our debt to them: their ideas provided a springboard for many of ours; the basic soundness of many of the existing series has allowed us to proceed in an evolutionary rather than a revolutionary manner.

In this Report we owe special thanks to the Chairmen and members of Working Groups 'A' and 'B' and of their Sub-Groups and to those who, as co-opted members, contributed to their work. We also wish to acknowledge with gratitude the essential help and support willingly given by many professionals and officers in the NHS, the DHSS and the OPCS who responded with energy and enthusiasm to our frequently time consuming requests for advice and guidance and who read, criticised and improved the interim versions of the two parts of this Report (published and circulated in June and July 1981 respectively). We take particular pleasure in recording our thanks to Dr John Ashley of the OPCS for the sustained and helpful interest he has taken in our work and for the contribution he has made to it. We are grateful to the many operational managers and staff in the pilot districts who have tolerated our intrusion into their work and have welcomed our many visits.

We are deeply indebted to Dr Alastair Mason, Mr Michael Dunning and Mr Charles Hogan of the Secretariat for the invaluable work they have done and are doing in maintaining the momentum of our enterprise, for drafting documents, undertaking research, consulting users and for supporting us in an exemplary way. The exceptionally difficult task of ensuring the progress of the work of Working Group A fell to Dr Mason; he discharged it with singular distinction.

Edith Körner
Chairman, NHS/DHSS Health Services
Information Steering Group

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Part I Introduction to the series and scope of the First Report

1 Introduction to the series

> To Florence Nightingale '. . . statistics were more than a study . . . She believed – and in all the actions of her life acted upon that belief – that the administrator could only be successful if he were guided by statistical knowledge. The legislator – to say nothing of the politician – too often failed for want of this knowledge.'
>
> Karl Pearson, The life, letters and labour of Francis Galton, vol. 2.

Background

1.1 The main task of those who guide and manage the provision of health care is to ensure quality, contain costs and secure access to those who need it. Or, to put it more simply, to provide a good service for as many people as need it at least cost.

1.2 This task entails the weighing of options and their consequences, and the making of choices. Such choices and the decisions flowing from them are likely to be more consistent and more rational if they are taken in the light of correct and relevant statistical information. They will also be more easily explicable to the public, to professionals and others affected by them and thus often easier to implement.

1.3 Though much lip-service is paid to the crucial and central importance of high quality statistics, few health authorities, management teams or heads of departments currently analyse data expertly, present them informatively or use them intelligently in the performance of their management task. Despite certain acknowledged inadequacies of the NHS data systems, far greater use could be made of existing statistics. As an inevitable consequence of infrequent use, the accuracy and general quality of data deteriorate and the timely production of outputs is neglected.

1.4 Inaccuracy, lack of timeliness and certain inherent defects form the core of the criticism levelled against NHS information. The volume of this criticism has increased since 1972, when the Report on Management Arrangements noted that 'existing information is sometimes unreliable, of doubtful relevance and out of date, and there are gaps in what is available . . . .' (1) The introduction of the NHS Planning System in 1976 also highlighted basic deficiencies in the disjointed data systems, and this was officially recognized by the DHSS when it was noted that current activity and financial statistics 'are in many ways unsatisfactory for planning work' (2). In its recommendations for a structured approach to resource allocation, the Resource Allocation Working Party identified 'a clear and pressing need for improvement in the data routinely collected' (3). The information available for the monitoring and control of resource utilisation was strongly criticised in the Report of the Royal Commission on the NHS (4) and in an associated Research Paper (5).

1.5 Several of the quoted sources also lent renewed emphasis to the crucial role of clinicians in the management of resources and, a fortiori, to the need for information to enable them to fulfil it (6,7,8).

1.6 The DHSS responded to this general discontent by initiating, in 1978, a preliminary study of the problems as perceived both by the NHS and within the DHSS. The findings of this investigation were summarised in a consultative document issued in February 1979 (9). The response to the document showed that there was widespread agreement within the NHS that there should be changes in the substance of the data collected, the organisation of the collection and processing of data, and the attitude to be adopted to information matters generally. It was emphasised that the data collection and processing resources in the NHS were being used for the most part to meet the information demands of the DHSS and that local managers found themselves without the information they require. Particular problems were seen to be caused by the separation of the collection and processing of activity, finance and manpower data and the differences of timing, concepts and definitions occurring between them.

1.7 The views of DHSS officials were equally critical. They considered that much of the information was available too late for their purposes and that many of the data were inaccurate or incomplete which reduced their usefulness.

1.8 These findings gave rise to the creation of the Information Steering Group and to the guiding principle which governs its work: an approach to the provision of information which is based on the requirement to collect data because they are essential for operational purposes. User-oriented information yields benefits to those who collect it, and thus provides an incentive for accuracy and expedition.

Steering Group strategy

1.9 Once established, the Steering Group had to decide how best to break the vicious circle of under-use of information and poor quality of the data collected.

1.10 Two possible approaches were considered. One entailed initial priority being given to the stimulation of the more effective use of currently available statistics, and, through better use, improving the quality of the basic data. The second approach involved a preliminary review and enhancement of current statistics, followed by a major drive to promote better use of information. After extensive discussions with NHS professionals, it was decided that existing systems were not good enough to justify the first approach alone. We therefore started with a review of existing data systems, the first comprehensive and detailed review of the statistics available for health service management since the inception of the NHS.

The review of information

1.11 We set up a number of working groups to investigate specific health service activities, namely:

a. hospital facilities used by consultant medical staff,
b. laboratory and scientific services,
c. paramedical services,
d. community health services,
e. health service manpower,
f. health service management accounting, and
g. patient transport services.

1.12 All of them work to the same pattern:

a. identification of the information requirements of a district health authority and its management team;

b. identification of any additional needs of regional authorities and central government departments (primarily the DHSS and OPCS);

c. development of definitions and classifications for the data items which are to be collected to satisfy identified requirements;

d. field testing of the recommendations in at least four health districts;

e. consultation about the recommendations, both formal by the circulation of working papers and interim versions of recommendations, and informal through a series of regional seminars; and

f. finalising recommendations in the light of field testing and consultations, and indicating the likely resource consequences and a feasible timetable for implementation.

Improving the data environment

1.13 The implementation of our recommendations about the data that should be routinely collected in all districts will not of itself ensure the effective provision of information for health service management. We are also concerned with assisting in the creation of an environment which will allow and encourage the efficient collection, collation, processing and transmission of data. We therefore see it as part of our task to:

a. promote the training of data collectors and information users,

b. identify the management arrangements and the skills required to provide a district with an effective information service,

c. develop data standards against which to check the validity of data,

d. develop best administrative practices to ensure that patient and staff data are kept confidential,

e. promote the use of information technology, and

f. stimulate the development of computer systems to enable the integration, ease of transmission and distribution of and access to data.

1.14 The smooth implementation of our recommendations will require training of the staff responsible for data collection. Discussions are taking place with regional training officers and appropriate professional organisations about the provision of suitable training packages and of regionally organised training activities.

1.15 As our recommendations are implemented, the main priority will be the promotion of the better use of statistical information and health care intelligence by those who manage health care resources. Discussions with national management training centres and with relevant professional bodies have already started. We hope to contribute during the implementation phase of our recommendations by:

a. working with authorities and their senior officers to ascertain how best to exploit the new data to assist district management,

b. organising educational events to promote the exchange of experience between district officers,

c. organising educational events to disseminate methods of data analysis and presentation, and

d. publishing innovative methods of data analysis and presentation.

1.16 Considerable concern has been expressed by those involved with information services that the combined effect of the 1982 restructuring of the NHS and the mandatory reduction of management costs could seriously hinder the development and maintenance of district information services. The transformation of data into information to assist district health authorities and their officers to allocate, plan and review the use of resources requires an appropriate organisational infrastructure and relevant manpower skills. We have started to organise a series of workshops to explore this problem further; a paper will be published later this year.

1.17 In future all information for the DHSS will be submitted from regional authorities. The NHS will have to take full responsibility for ensuring that data are accurate and complete, and available on an appropriate time scale. A Steering Group paper giving guidance about data standards will be published later this year for wide distribution in the NHS.

1.18 Data protection is an important concern of the Steering Group and, in February 1982, we set up a working group to recommend good practices to maintain the confidentiality of staff and patient records.

1.19 Information technology and computer systems are both topics of interest to us, but the prime responsibility for national policy in these areas lies with the NHS Computer Policy Committee with which we are forging close working links. Jointly we will encourage the development of systems incorporating our proposals as well as the intelligent and prudent use of new information technology.

1.20 We see an increasing need for the use of computer systems within districts. In this context we are alive to the overriding necessity for compatibility between different computer systems. Considerable work in system design is required to achieve this and to identify the most effective configuration for integrated district systems.

1.21 We recognise that the success or failure of our work will be judged not by the quality of our reports or by the successful implementation of our recommendations about data and systems. The key criterion by which our performance must be assessed is the extent to which the information derived from the new data sets is used to make decisions about the allocation, planning and review of resources. This makes ours a formidable task but the encouragement and support we have received so far from both NHS and DHSS personnel augur well for a successful conclusion.

References to Chapter 1

1. Management Arrangements for the Reorganised National Health Service, HMSO 1972, paragraph 3.34.
2. The Draft Addendum to the NHS Planning System, DHSS January 1978, paragraph 2.7.
3. Sharing Resources for Health in England, HMSO 1976, paragraph 6.22.
4. Report of the Royal Commission on the NHS, HMSO 1979, paragraphs 21.56–21.60.
5. Management of Financial Resources in the National Health Service; Research Paper No 2, HMSO 1978.
6. Report of the Committee on the Internal Administration of Hospitals, HMSO 1954.
7. First Report of the Joint Working Party on the Organisation of Medical Work in Hospitals, HMSO 1967.
8. Hospital Costing and the Clinician; Harrogate Seminar Report No 1, DHSS 1978.
9. Health Notice (79)21.

2 The information needs of district authorities: the district minimum data set

Information needs of the district

2.1 Health authorities not only have the responsibility for administering health services, but are increasingly required to demonstrate their will and managerial competence to influence decisively the allocation, control and planning of scarce resources. The chairmen and members of authorities and their officers will be concerned with, and accountable for, reviewing options and this will involve studies of the current allocation of facilities and manpower to different activities, the preparation of future resource plans, the control over existing resources and the identification of constraints and bottlenecks. These reviews will form the basis for the selection and management of changes to existing patterns of resource use. They will also assist the dialogue about equitable financial allocations from region to districts.

2.2 In formulating our proposals, we have concentrated primarily on the information required by a district health authority and its officers. We believe that it is possible to identify a minimum set of data which should be used in all districts and that the data should be collected largely as a by-product of operational procedures. In deciding upon the level of resources to be devoted to each part of a district's service, district managers will need to consider whether the current disposition of resources and of activity is appropriate in the light of national and regional guidelines and locally determined priorities. These priorities will be affected by anticipated population changes, altered methods of delivering care, judgements about suitable standards and of the benefits that different dispositions might provide.

2.3 The control of the use of resources requires matching performance against agreed objectives, and methods will vary according to the nature of the activity. Where the demand for resources is determined by clinicians, the attitude of the district authority and its officers to questions of control is critical; the quality and acceptability of decisions in this sphere depend crucially on good information about the volume of activity in relation to resources used. Some authorities may wish to implement budgetary control systems relating to certain clinical activities or departments. For this they will need information that is relevant to the local situation and accurately attributes both costs and activities to the particular service. Such information should be developed locally as an extension to the minimum data set we are recommending.

2.4 In order to make informed judgements about their own performance, a district health authority and its officers require information not only about their own district but also comparable information about other districts. Inter-district comparisons are invaluable at district level when assessing the efficiency and effectiveness of resource use; they are also needed for planning and review purposes by Government. To enhance the validity of such comparisons, standard definitions and classifications have been developed for each data item we have recommended. For most purposes, the district is seen as the appropriate base for comparison.

2.5 By identifying and recommending a minimum set of data, we imply that a district health authority and its officers who are not regularly using such data are handicapped by being inadequately informed when fulfilling their responsibilities. We stress that the recommended data set only represents a minimum; most districts will require additional data to provide information pertinent to local needs and circumstances.

2.6 Although the district minimum set of data will be relevant to the needs of operational managers, most units and departments will wish to collect for operational purposes more data than are included in it. However the variety of departmental arrangements and sizes and the individual styles and approaches of operational managers militate against the national prescription of standard data sets for every discipline and department. We believe that universal standardisation within managerial units would be undesirable and could well inhibit useful innovation.

2.7 The Steering Group's main concern is with information for health services management. Thus we have not tackled specifically the information needed by health professionals to evaluate the results of their care; nor that needed by individual professional bodies to review the resources available to and the professional work of their members. An exception to this working rule concerns maternity services and because of the interest and involvement of the relevant professional bodies, recommendations have been made about clinical data items to assist clinicians in reviewing the process of care. However, clinicians in other specialties and other health professionals will find much in our recommendations that will assist them in reviewing their performance and the volume of resources devoted to their activities.

2.8 For comprehensive planning, a district health authority requires information about the activities of other providers of care such as general practitioners, local authorities and both voluntary and private health organisations. Thus when care is provided in a complementary way (e.g. provision of regular day care for the elderly) it is important to have compatible information about the use of all facilities in a district. The present recommendations, however, are specifically applicable to the information required about all patients looked after by the NHS in its own institutions, through its own organisation and in facilities under contractual arrangements. Health districts should seek local agreements with non-NHS providers of health care to exchange compatible information.

2.9 In our work we have not directly considered information about the occurrence of disease or about the health needs of populations except in so far as these can be inferred from data about hospital episodes and certain community health programmes; nor have we made recommendations about data describing health status or the clinical and social outcomes of the use of health services. The former are outside the scope of our work; for the latter methods of measuring these important variables are not sufficiently developed to allow their introduction as a routine in health service information systems. When further research has identified those indicators which are not only sought by health service managers but are also capable of routine collection in all health districts, consideration will be given to their inclusion in the minimum data set.

District minimum data set

2.10 Our approach to information for management postulates that the needs of the district tier of the NHS are paramount. It has been assumed throughout that if information is not required at district level, it is unlikely that it is required by regions or the DHSS. There have been few exceptions to this working hypothesis; in most cases they are due to statutory obligations imposed upon the DHSS.

2.11 The recommendations about the minimum data set required at district level are a compromise between the desirable, the feasible and the affordable. In assessing the desirability of a statistic, it has been assumed that health districts are actively selecting options for resource allocations in the ways outlined in paragraphs 2.1 – 2.2. On the basis of this assumption, each working group has identified the information required to enable district managers to carry out their tasks, the data, their classification and definitions, and the most suitable arrangements for their collection. The items of the data set can be aggregated and linked in many different ways to provide information, and only some of the most commonly used ways are described. The approach adopted is based on the experience of those who have used statistics in the NHS and not on a theoretical model which purports to define all the tasks and then to identify the information each health service manager requires to carry them out. Our pragmatic approach has led quickly to the development of practical recommendations which are capable of implementation within a reasonable time.

2.12 A recommendation has been considered to be feasible if, in our judgement, it can be implemented nationally within three years. Any new statistic, definition or classification contained in this Report has, with the exception of the proposals concerning the maternity component of the patient information system, been tested in at least four health districts and found to be collectable. Judgements have had to be made about the speed and extent of the introduction of electronic data processing into the NHS. The processing of detailed data about patients can only be carried out effectively using computers and thus the inclusion of such items in the minimum data set depends on how quickly appropriate data processing procedures are available to all health districts. To encourage these developments, data sets have been devised for patients attending consultant out-patient clinics and accident and emergency departments, even though it is accepted that only a minority of districts will have the computing capability to process these particular data within the next three years.

2.13 The potential cost of implementing our recommendations has been borne constantly in mind by all the working groups. Although it has been assumed that there will be no significant increase in the resources available for information services in either the NHS or the central government departments, the cutting or containment of expenditure on these services has not been a prime objective of the Steering Group. The major aim has been to produce relevant, timely and accurate information to assist health services managers. Part of this task includes stopping the collection of data no longer needed. However, in specific areas, such as operating theatres and day care facilities, extensions to the current statistics are proposed. In others, such as mental illness services, it has been recommended that tasks currently done by DHSS are taken on by regional health authorities.

2.14 The NHS has, over the years, made a considerable investment in information services and, by and large, has obtained poor value for the resources committed. Any changes to existing systems which we recommend are likely to produce considerable benefits. Because the development of information services is more advanced in some health regions than in others, the resource consequences of our recommendations will vary from region to region. In each of our reports there will be an annex in which our views of the likely resource consequences of the recommendations are discussed (see Annex II). Changes to existing systems will have an inevitable initial cost associated with implementation but this and any additional costs arising from running the new system should be considered against the benefits that accrue to patient services through better management decisions.

Characteristics of the data

2.15 In developing the district minimum data set within the general philosophy already described, the working groups have paid particular attention to the following characteristics of data:

a. relevance,

b. timeliness, and

c. ability to be collated with data from other sources.

2.16 As clinical practice changes, the data collected about hospital patients and resources have to be altered to accord with current clinical reality. Hospital resources are used with increasing flexibility; there is a greater emphasis on hospital care which does not involve an overnight stay in a hospital bed; during one course of treatment a patient may be looked after both in hospital and outside. The data items, definitions and classifications that we are recommending are relevant to modern clinical practice, and in some cases replace statistics that have been collected for many years but are now of limited usefulness.

2.17 Information about resource use and patient characteristics should be available with a timeliness appropriate to the purpose for which it is being used. Different items of data are required with varying urgency at different levels of the service. In particular there is a need for aggregated data about the use of beds to be available quickly at the district level. The recommendations concerning the mechanics of a computer based information system about patients using a hospital bed should allow data to be available within a timescale acceptable to the district management team.

2.18 The Steering Group is responsible for ensuring not only that the recommendations of the various working groups are compatible, but that they facilitate the collection of data about clinical activity, demography, health service manpower and finance. To this end, care has been taken to achieve consistency of definitions, classifications and levels of data aggregation and of the time periods over which data are collected.

3 The Scope of the First Report

Introduction

3.1 We decided that our first priority should be the review of information about clinical services. Statistical information about the clinical services in a district is drawn from three main sources, namely:

a. activity data,

b. health services manpower data, and

c. financial data.

3.2 The major areas of clinical work can be categorised as:

a. *Services provided on hospital premises:*
  —hospital wards
  —operating theatres
  —accident and emergency departments
  —radiotherapy departments
  —diagnostic services

b. *Services provided on or off hospital premises:*
  —consultant out-patient clinics
  —day care facilities
  —paramedical services
  —family planning services
  —maternity services

c. *Services provided in or for the community:*
  —preventive services
  —community nursing
  —child health and school health services.

3.3 This Report is a synthesis of the recommendations of the two working groups which have reviewed the data required about the activity of:

a. the services provided on hospital premises (except radiotherapy),

b. the services provided in consultant out-patient clinics,

c. the services provided in day care facilities, and

d. the services related to a registrable birth.

Further reports will be concerned with the data about activity in those services and departments not covered by this Report, and with the data required about health service manpower and finance.

3.4 We have been concerned with two broad types of data about clinical activity, namely:

a. Data about the characteristics of individual patients using a facility or receiving a service.

b. Data about the characteristics, availability and use of, and demand for a facility or service.

Part II of the Report is concerned with information about patients, while Part III covers information about facilities.

Information about patients

3.5 As a general rule the processing of data about individual patients requires the use of computing facilities. The availability of computer data processing is thus a key factor in decisions concerning the feasibility of introducing patient based information systems.

3.6 In Chapters 4 and 5 of this Report recommendations are made about the introduction of an integrated patient information system which will include data about the use of hospital beds. The set of data to be collected about a registrable birth is recommended in Chapter 6. In addition to data from the patient information system, information will be obtained from birth notification and registration. Additional requirements for psychiatry, which include the holding of an annual census and the collection of data about patient legal status and the administration of electroconvulsive therapy, are described in Chapter 7 which also contains a discussion about the holding of a census for all long stay patients.

3.7 Consideration has been given to the possibility of introducing computer based information systems to collect data about the number and type of patients waiting for elective admission and those attending consultant out-patient clinics and accident and emergency departments. Although these developments are highly desirable and feasible, we do not have enough evidence to recommend such systems as being generally affordable in the next three years. To encourage initiatives in these areas, however, we have concluded that the introduction of such patient based systems is administrative good practice and in Chapters 10, 11 and 14 minimum data sets for patients attending out patient clinics, waiting for elective admission and attending accident and emergency departments are described.

3.8 The availability of a computerised data base about patients using a hospital bed allows the production of a large number of data outputs. Many of them will only be of interest locally but there is a need for nationally available data output from the fourteen regional data bases. In Chapter 8 proposals are made about the data that should be collated centrally.

Information about facilities

3.9 The review of information about facilities has used a common framework which can be applied to most clinical departments or services. At district level there may be a need to know about:

a. The type of facilities in the district; this can be achieved by completing an inventory describing the characteristics of the different types of facility.

b. The volume of resource that will be available for a future time period; for many facilities we have recommended that district management teams should state the volume of resource that they intend to make available.

c. The volume of resource that was available; this can be measured by a retrospective count of the resources available for patient care.

d. The use made of the facility; recommendations are made about measuring the volume and type of work done and recording the initiator of the work.

e. The work which was not done; this can be measured by counting the patients for whom arrangements were made to attend a facility but who did not do so.

f. The demand by patients for a facility that has not been met; recommendations are made about measuring the demand for elective admission and consultant out-patient clinics.

3.10 It is not possible to recommend in the minimum set, data which supply information as specified above for all the facilities reviewed. A summary of the types of information which as a minimum will be available in each district about each facility is shown in Table I; the terms used are described in the preceding paragraph.

Table I Types of information about facilities to be collected in the district minimum data set

TYPE OF INFORMATION	FACILITY						
	Wards	OP Clinics	Theatres	Day Care	A+E	Pathology	Radiology
Inventory	+	+	+	+	+	+	+
Planning intention	+	+	+	+			
Resource availability	+	+	+	+			
Resource use	+	+	+	+	+	+	+
Initiator of workload	+	+	+	+		+	+
Planned work not done	+	+	+	+			
Unmet demand	+	+					

3.11 Modern methods of patient care and current financial and staffing pressures have meant that there have been considerable changes over the last 10 years in the way in which clinical facilities are used. Patients attending wards may or may not use a bed, and even if they do, they may not stay in hospital overnight. Consultants may hold out-patient clinics in many locations other than the traditional hospital out-patient department. The same clinical procedure may be carried out in different districts in different types of facilities. We found in the course of our investigations that many districts are using their facilities in innovative and unorthodox ways: some examples are given in paragraphs 3.14 and 3.16. These practices are to be commended and not, as often happens currently, penalised through a failure to capture data about them. To facilitate the collection of statistical data about clinical activity with a view to producing information which reflects clinical reality and permits comparison between districts, we have reviewed the ways in which terms such as ward and out-patient clinic are currently used and have recommended certain refinements.

3.12 We have been particularly concerned with the definitions for statistical purposes of a hospital bed and a ward.

a. Most hospital beds are easily identified. To ensure complete and accurate recording of the work done it is necessary for statistical purposes to extend the definition to include such other devices or arrangements that may be used to permit a patient to lie down when the need to do so is a consequence of the patient's condition rather than a need for active intervention such as examination, diagnostic investigation, manipulative treatment or transport.

b. For statistical purposes a ward should be considered as a group of beds with associated treatment facilities managed by a senior nurse. All the rooms in a small hospital may be managed by one senior nurse and thus they would comprise one ward. Alternatively within one group of rooms there may be two distinct sets of beds each managed by a senior nurse (e.g. general medical beds and coronary care beds). A ward may be available all the time or for only limited time periods during the day or week.

3.13 The nature of out-patient clinics has also changed and for statistical purposes we consider that a consultant out-patient clinic is an administrative arrangement enabling patients to see a consultant, his staff and associated health professionals. The holding of a clinic provides the opportunity for consultation, investigation and minor treatment, and patients attend normally by prior arrangement. A clinic occurs regularly in the same location which may be on or off the hospital site. Although a consultant is in overall control, he may not be present on all occasions when the clinic is held. An individual consultant may run more than one clinic in the same or different locations.

3.14 The use of the definitions recommended in preceding paragraphs will help to ensure that clinical work is recorded more completely than at present but may lead to initial difficulties in determining whether a particular activity should be recorded as ward or out-patient clinic work. In particular it should be noted that:

a. An out-patient clinic can be held in a ward if a consultant has a regular arrangement to see patients who are not using hospital beds. This work should be classified as out-patient work and, in the district out-patient clinic inventory, the clinic would be described as occurring on the ward. Patients who attend the ward without such a regular arrangement being made should be included in the ward statistics as ward attenders.

b. The definition of a bed does not exclude the possibility of a couch or trolley being used as a bed, provided it is used to permit a patient to lie down rather than for merely examination or transport. Thus a group of trolleys or couches being used for this purpose should be considered a ward. An example of such an arrangement would be a day surgery ward in which four trolleys are available for three days a week.

c. In some districts special administrative arrangements are made for patients who require a particular procedure such as endoscopy or cystoscopy. Patients may be brought to an out-patient suite, a purpose built facility or to other facilities in the hospital, and they may use beds, couches or trolleys. If the patient's condition does not require recumbency and he is only lying down because of the active intervention, work of this nature should be considered as occurring within an out-patient clinic. If, for example, the intervention requires narcosis which will necessitate the patient to lie down because of his condition, the work should be considered as occurring in a ward.

3.15 It has proved extremely difficult to lay down strict criteria which will allow for every innovation and clinical practice. We have tried to overcome the problem of the current rather restrictive definitions which have caused much clinical work to be recorded inappropriately, or not at all. However, clinical practice is not and should not be static, and it should always lead rather than follow the information requirements. Therefore the Steering Group will keep these issues under review and produce further guidance as required.

3.16 Day care facilities, operating theatres, accident and emergency departments and diagnostic departments do not present the same definitional problems, and descriptions of the key characteristics of these facilities are contained in the relevant Chapters of this Report. It should be noted however that an out-patient clinic can be held anywhere in the district and in the pilot studies clinics were identified as being held in a day care facility, an accident and emergency department and a pathology laboratory.

3.17 To assist the process of relating activity to financial data, we **recommend** that all nationally available data collected by facility returns be aggregated on the basis of a financial rather than a calendar year. This recommendation is pertinent to Chapters 9–15.

Types of recommendation

3.18 The majority of the recommendations in this Report concern the data items with associated classifications and definitions that should be regularly available to district managers. In addition to the minimum set, the collection of some items has been recommended as administrative or, in the case of some of the data items about a registrable birth, clinical good practice.

3.19 No attempt has been made to identify the precise format of information derived from the minimum data set to be used at district level. Recommendations in this Report only cover activity data, and the information needs of district managers require the linking of activity data with population statistics, manpower and financial data. Once our other work is completed, we will consider with the NHS the most productive ways of exploiting the rich data base that will be available. As experience is gained in using the minimum data set for management purposes, we recognise that we will have an important role in disseminating to the NHS interesting and useful ways of analysing data and presenting information.

3.20 The subset of these data which should be available nationally is also recommended. District data should usually be collated and if necessary summarised by region for onward transmission. No attempt has been made to identify a regional minimum data set; each region will do this for itself in consultation with the districts.

Part II Information about patients

4 An integrated patient information system

CURRENT PATIENT BASED SYSTEMS

4.1 Information about patients using a hospital bed is currently collected by:

a. Hospital Activity Analysis (HAA), a regionally organised computerised information system containing data about hospital discharges; most regions do not include psychiatric and maternity discharges. A 10% sample is submitted to the Office of Population, Censuses and Surveys as the Hospital In-patient Enquiry (HIPE).

b. Mental Health Enquiry (MHE), a centrally collected computerised information system containing named data about hospital admissions and discharges from psychiatric hospitals and units and the Special Hospitals.

c. Many information systems about maternity events.

Hospital Activity Analysis

4.2 Although it is commonly believed that HAA is a national system based on the form HMR 1, in practice the coverage, form and content of computer input, and methods of data collection and processing differ from region to region. The major criticisms of the system include:

a. inappropriateness of some of the definitions used,

b. difficulty in linking components of a patient's stay if they take place in different hospitals,

c. difficulty of collecting accurate, complete data,

d. incomplete coverage of patients not staying in hospital overnight, and

e. limited coverage of psychiatric and maternity episodes of care.

Mental Health Enquiry

4.3 An internal DHSS Review of Mental Health Statistics has recommended that, primarily for reasons of economy, the Department should no longer maintain the MHE in its present form. In particular, the Review recommended that the collection of named data should be discontinued, as should the central collection and processing of patient data, and suggested that the latter functions be transferred to region. The loss of centrally collected named data is regretted, as the capacity to link records provides a useful epidemiological tool and also assists in the validation of data. Without national linking there can be no check on the accuracy of first admission rates, which are of considerable interest.

4.4 On the other hand, MHE data are not timely enough for operational management and a significant and increasing proportion of psychiatrists are not submitting named data to the DHSS for reasons of data confidentiality; at least 16% of all records are submitted without the patient's name. Current patterns of care, with an increasing emphasis on care in the community, have also reduced the value of a hospital information system for obtaining epidemiological information about mental illness and mental handicap.

Maternity information systems

4.5 Information about individuals or groups of individuals concerning pregnancy, birth and the post-natal period can be obtained currently from a variety of different information systems, namely:

a. Birth certification and civil registration. A qualified informant is statutorily obliged to give information about every live and still birth and maternal or neonatal death to the Registrar of Births and Deaths.

b. Birth notification. A designated medical officer of a health authority must receive notification of all births occurring within the authority's boundaries. The majority of health authorities are taking part in the Child Health Computer System and have adopted the recommended notification form.

c. Hospital In-Patient Enquiry (maternity). This system contains data from a 10% sample of all discharges of maternity cases.

d. Hospital In-Patient Enquiry (general). This system contains data from a 10% sample of all discharges of gynaecological cases and babies in special care units.

e. Hospital Activity Analysis (maternity). Information about all discharges of maternity cases is collected but this system is operational in fewer than 50 hospitals.

f. Hospital Activity Analysis (general). This system contains data about all discharges of gynaecological cases and babies from special care units.

g. Neonatal Discharge Record. This form has been designed as part of the Child Health Computer System. It is intended to form the foundation of a child's pre-school health record.

h. Notification of congenital malformations. Those detected at birth or in the perinatal period are notified to the Office of Population, Censuses and Surveys.

A further system, the Standard Maternity Information System, is also being developed and this is intended to replace e. above. In addition a number of other obstetric and neonatal information systems have been developed for local use.

4.6 At present the systems collecting information about mother and offspring are poorly co-ordinated. This piecemeal approach gives rise to a number of problems:

a. there is replication in the collection and recording of data,

b. different definitions and classifications are used for the same data items in different systems,

c. some information required is not recorded,

d. many of the systems are only used in certain parts of the country,

e. there are major problems in reconciling and drawing together data in the different systems, and

f. delays in producing data output make the information of limited value to clinicians.

AN INTEGRATED INFORMATION SYSTEM

4.7 The impending demise of the Mental Health Enquiry and the current lack of an effective maternity patient information system prompted us to explore the possibility of developing an integrated information system covering all patients using a hospital bed. Although historically there have been separate systems for the general specialties, psychiatry and maternity there is no reason to continue this practice. Having consulted all the relevant professional interests and obtained their support, we **recommend** that a minimum set of data be collected by a single patient information system on all patients who occupy a bed in a ward as defined in Chapter 3.

4.8 The maintenance of separate systems causes data recording and capture problems as many of the distinctions between them have become blurred with patients regularly being transferred between the systems. The elderly physically and mentally ill, for example, span the specialties of psychiatry and geriatric medicine; gynaecological beds may be used for women in early pregnancy; and there should be no distinction in statistical coverage between normal babies, hitherto included in the maternity system, and those in special care baby units, hitherto included in the general system. Apart from clinical considerations, data recording, collection and collation should be facilitated and improved by the use of a standard set of data items for all patients.

Data processing

4.9 The development of a computing policy for the NHS is not our responsibility but as data collected for the patient information system must be processed by computer, many of our recommendations have data processing implications. An important technological development during recent years has been the computerisation of patient administration systems within districts. This should have allowed major developments in local information systems but in many cases full advantage has not been taken of the available technology and many of the current systems are not integrated with regionally administered patient information systems such as HAA.

4.10 The patient information system can be processed at regional level and the majority of the recommendations about data content and the mechanics of the system are currently operational. However, we **recommend** that the patient information system be input and accessed within the district where the data required can be obtained as a by-product of operational management from a patient administration system. Only in these circumstances is data quality likely to be good. To facilitate district managers' access to data output, a patient administration system must have the capability to produce statistics derived from the minimum data set.

4.11 It is essential, however, that whatever data processing facilities are used within a district, data can be transmitted from district to region in a computer compatible form. To avoid duplication and the consequent misuse of resources, we **recommend** that local computerised patient administration systems and the regional and national data bases drawn from them be considered as a single entity and that a minimum data set for every patient admitted should be available to the appropriate district and region. Considerable work is required in systems design to ensure the efficient flow of data from one computer to another.

Data sources

4.12 With increasing frequency data are being keyed directly into the computer. However some districts will have to depend on paper systems for the time being. In the latter situation primary sources of data for the patient information system will usually be admission slips, daily ward listings, patients' medical records, and in the case of maternity information, birth notifications and registrations. Data from these sources should be transferred to standard input slips for submission to the computer.

4.13 Whatever the mechanics of putting data into the computer, the initial data sources must be as reliable as possible. In each district the following should be clearly laid down:

a. the tasks to be carried out by medical records staff and ward clerks by way of data recording and collection,

b. the optimal contribution from doctors, nurses and midwives, and

c. the content and structure of clinical summaries.

Components of the system

4.14 Following admission, patients may be transferred from the care of one consultant to another. They may or may not change wards. A consultant episode is the time a patient spends in the care of one consultant. If the work done by individual consultants or specialty groups is to be accurately recorded each consultant episode must be separately identified. Data about consultant episodes may be linked or aggregated in a number of ways, namely:

a. all the consecutive consultant episodes experienced by an individual patient can be linked to calculate the patient's length of stay in a district.

b. all the consultant episodes attributed to one specialty can be aggregated to obtain information about that specialty's use of beds, and

c. data about the patients under the care of a specialty can be analysed to provide information about such factors as the case-mix being treated.

4.15 Patients may also be transferred between wards in the district. A unit of bed usage is thus the ward stay, the time a patient stays in one ward. Data about ward stays may be linked or aggregated in a number of ways, namely:

a. all the consecutive ward stays experienced by an individual patient may be linked to calculate the patient's total stay in one hospital or all the hospitals used in a district,

b. all the ward stays in wards of the same resource type can be aggregated to obtain information about the use of these facilities, and

c. data about all patients using an individual ward or groups of wards can be aggregated to provide information about such factors as the case-mix being treated.

4.16 We **recommend** that there should be two basic components of the patient information system, the consultant episode and the ward stay. The following definitions should be used to identify the constituent parts of the system:

a. Basic components:
   i. *Consultant episode* – the time a patient spends in the care of one consultant.
   ii. *Ward stay* – the time a patient stays in one ward.

b. Usual aggregations:
   iii. *District spell* – the total continuous stay of a patient in a hospital or hospitals in the district.
   iv. *Hospital stay* – the time a patient stays in one hospital.

c. Events designating a component:
   v. *Admission* – the beginning of the first consultant episode.
   vi. *Discharge* – the end of the last consultant episode.
   vii. *Transfer* – the end of any consultant episode or ward stay except the last.

4.17 We **recommend** that the highest level for linking consultant episodes and ward stays should be the district. This has been chosen as a compromise between what is desirable and what is practicable. Although the ideal would be the linking of all consecutive events regardless of the hospital in which they occur, once a patient has been discharged to another district, the first district exercises no control over the patient nor indeed is it likely that any useful statistical information about the patient's subsequent progress will be fed back. However, if individual districts have particular patient flows to facilities outside their territory, local arrangements could be made to extend the linking of continuous hospital stays beyond the district boundary.

Multiple stage inputs

4.18 In order to provide timely data output for district managers and to assist checking the completeness of coverage, we **recommend** that data should be put into the computer in stages such that data on admission, transfer and discharge can be merged.

4.19 The advantages of submitting details available on admission are that they:

a. satisfy immediate local needs for day to day information on the current utilisation of facilities;

b. permit good housekeeping of subsequent inputs to the system and such input is compatible with remote data entry for computerised patient administration systems;

c. satisfy the need for aggregated information on patients admitted where corresponding information on discharge is incomplete or otherwise unsatisfactory, e.g. long stay patients;

d. facilitate a census identifying the known characteristics of patients at one point; and

e. overcome the problem of the lack of data output solely due to the non-availability of clinical data.

4.20 It is felt that these advantages outweigh the often quoted disadvantages, namely:

a. The resource implications of re-punching identifying details with the possibility of mismatching. However it is not thought that the resource implications are high and many current patient systems have mechanisms which minimise the likelihood of errors occurring.

b. The need to retain the input documents in medical records departments. We have ascertained that in many regions this is widespread practice already although the admission data may not be input to the computer at this stage.

4.21 Of the constituents, noted in paragraph 4.16, only hospital stay is used for regular national analysis. In our new system, information about specialty activity will be derived from data about consultant episodes and not from hospital stays. Very often the fact of a consultant transfer is associated with a change in diagnosis. The separate recording of consultant episodes will emphasise the fact that diagnoses and operative procedures relating to a district spell cannot be assumed to apply to each of the consultant episodes within it. The credibility of the system will be strained if an apparently unrelated main diagnosis is assigned to a consultant episode. We thus **recommend** that each consultant episode warrants a data set including diagnoses and operative procedures. These data may be put into the computer some time after the transfer between consultants has taken place.

4.22 In some regions it is the practice to submit a unified set of clinical and non-clinical data at some time following the end of a hospital stay. However, general experience suggests that this timetable is too slow to meet the demand of local management for non-clinical information. The urgency of these requirements is always likely to be incompatible with the availability of accurate clinical information. The latter, however, is an essential part of local needs if clinical interest and participation in the system are to be assured. We therefore **recommend** that, at the end of each consultant episode, two separate sets of data be input, one containing non-clinical data which should be submitted at discharge or transfer, the other containing the clinical details noted in the preceding paragraph.

4.23 The number of data inputs required will depend on a variety of local and regional factors. However, the data items to be collected in the minimum data set can be grouped as follows:

a. input only on admission,

b. input on admission and at the start of each consultant episode,

c. input on admission and at the start of each ward stay,

d. input only on discharge, and

e. clinical data input at the end of each consultant episode including discharge.

Merging of data inputs

4.24 To ensure the successful merging of data inputs, we **recommend** the use of:

a. a district numbering system,

b. form numbers, and

c. episode numbers.

4.25 A district numbering system is desirable to bring together the medical records of individuals treated throughout a district. It also greatly facilitates the merging of different stays and episodes during a spell as all the contacts that a patient may have with the hospital service in a district are recorded under one number. The linking of different spells, if they have occurred in the same district, can also be achieved. The type of district numbering system to be used is for local decision. A district master patient index may be of two types: either a patient has a unique number and medical record, in which his total clinical history is recorded, or the index records for each patient the numbers of the separate medical records registered in his name. The advantage of the former is that spells may be linked over several years. Manual linking without a district master index of either type has been shown to be a practical but less desirable alternative.

4.26 Computer merging of input documents within a consultant episode should be achieved by the use of a form number, i.e. a pre-printed unique number on each part of a multi-part stationery set. This number should include a check digit to reduce punching errors. Other items, in particular the district patient number, can be used as a confirmatory check but the inclusion of additional data items will have resource implications.

4.27 To achieve the merging of different episodes, the district patient number and an episode number should be used. The episode number ensures that different episodes in the same district spell can be brought together in the correct sequence.

Maternity information

4.28 Information required about maternity differs from that concerned with other types of health care in a number of ways and of particular concern are:

a. although the recording of care starts with one individual, it is usually eventually concerned with two or more, and

b. information about the birth event is required to organise other health activities either urgently, or, at a later date, to initiate a child health record and preventive health measures such as vaccination.

4.29 In our work on maternity information we have tried to ensure that:

a. as far as possible the same data items, definitions and classifications are used as for all other specialties,

b. the same data items are collected for a registrable birth regardless of where the event took place,

c. the data set is compatible with the requirements of the Child Health Computer System,

d. there is an opportunity for health professionals to have additional data to evaluate the care of their patients, and

e. it is possible to link successive district spells in the same pregnancy for the purpose of analysis.

4.30 To achieve these aims we **recommend**:

a. The data items for a mother admitted to a maternity ward but who does not produce a registrable baby should be identical with those collected for patients of other specialties and be classified and defined in the same way.

b. A national minimum set of data items should be collected for each registrable birth.

c. The same data set, with a few items recorded as not applicable, should be used for home deliveries.

d. At delivery each infant should be identified administratively and documented as a patient.

e. For each pregnancy resulting in a registrable birth there should be a minimum data set for the mother and each baby. The data items for mother and baby should be identical with those collected for patients of other specialties and be classified and defined in the same way, thus allowing these data to be included as part of the patient information system.

f. The data about mother and each baby should be brought together by means of the delivery/birth notification with a few items obtained from registration; the whole giving information about the mother, delivery and offspring.

g. Successive district spells in the same pregnancy including the one resulting in a registrable birth should be able to be brought together for the purpose of analysis.

4.31 In addition to the minimum data set, recommendations are made about two clinical optional sets endorsed respectively by the Royal College of Obstetricians and Gynaecologists and the British Paediatric Association. Best practice requires that these data items be collected on all births but, as their capture requires the active co-operation of local clinicians, the collection of such data sets should be a local option. The merging of the maternity minimum data set with the data in the maternity clinical option will provide all the data required for the Standard Maternity Information System. The minimum data set added to the neonatal clinical option will provide all the data required for the Neonatal Discharge Record. In the pilot trials of our maternity recommendations, consideration will be given to linking information about neonatal deaths.

5 The minimum data set for the patient information system

Introduction

5.1 In developing a minimum data set for the patient information system only those items of data which need to be aggregated have been considered. No recommendations have been made concerning items which are required solely for the care of the individual patient. In terms of its information content the minimum data set can be divided into six parts:

a. data that allow the merging and linking of information about an individual patient,

b. data about the personal details of patients admitted,

c. data about referral for admission to hospital,

d. data about the use of hospital resources and facilities,

e. data about discharge from hospital care, and

f. data that allow patients to be classified by specialty, clinical or diagnostic groups.

5.2 As noted in the previous Chapter, data items should be put into the computer at different stages and thus items in the minimum data set can be grouped as follows:

a. data items input only on admission,

b. data items input on admission and at the start of each consultant episode,

c. data items input on admission and at the start of each ward stay,

d. data items input only on discharge, and

e. data items input at the end of each consultant episode including discharge.

In the classifications recommended for each data item, an additional category of 'not known' should be available, but this has been omitted in the relevant sections of the Report in order to concentrate attention on the data content.

DATA ITEMS INPUT ONLY ON ADMISSION

5.3 We **recommend** that the following items be input at admission and that the basic source of these items be the admission slip confirmed by the daily ward listing:

a. sex,

b. geographical code of current home address,

c. date of birth,

d. marital status,

e. code of appropriate general practitioner,

f. category of patient,

g. date of admission,

h. method of admission,

i. source of admission,

j. (i) if an elective admission other than a booked delivery, the date it was decided that there was a need for admission, or

(ii) if a delivery admission, the date of the first ante-natal assessment obtained from an ante-natal co-operation card, and

k. intended management of the patient.

Code of current home address

5.4 The primary address to which a patient can be related is that of the usual place of residence, which is referred to on the present form HMR 1 as 'home address', and at birth and death registration as 'usual address'. The form of words on the HMR 1 is easily understood and we **recommend** that it continue to be used. This address in coded form can provide statistics about patient flows between health districts and can be used to determine hospital utilisation rates for defined populations. The address code for babies born in hospital should refer to the mother's current home address. The fact that an individual has no fixed abode should be recorded under this data item.

5.5 Two other types of address were considered for inclusion in the minimum data set:

a. The address from which admitted if different from the usual place of residence. Data on usual place of residence will not identify patients admitted when staying away from home (e.g. when on holiday). This may be of importance in districts with a large temporary population but is not needed universally.

b. The address to which discharged if different from the usual place of residence. It may be of use to record this address to assure continuity of individual care but there is no purpose in aggregating these data.

5.6 Although accurate coding from postal addresses is difficult and requires a degree of local knowledge thus making the process labour intensive, we **recommend** that the usual place of residence be recorded as the post code, which is now included in each postal address. The automatic allocation of post codes to local authority wards and districts and to health districts is in an advanced state of development, and once installed will have beneficial resource implications. However, until all patients include the post code when giving their address, the collection of this item of data may be labour intensive. An appropriate code should be given to patients with no fixed abode.

Date of birth

5.7 Full date of birth has been recommended as the initial input to the system rather than age because it allows greater discrimination within the under one year age group, facilitates the tabulation of childhood data by year of birth, and prevents the inaccurate transfer of information about age from records derived at an earlier admission.

Marital status

5.8 Data about marital status are not difficult to collect and have aroused considerable interest in recent years, particularly in psychiatry, as different marital states may be correlated with different rates of hospital admission and length of stay. Marital status is at present included as one of the dimensions in routine national population estimates, and in census years lower geographical aggregations are available. Thus we **recommend** that it be classified in the patient information system in a way that is compatible with the methods used for population censuses.

5.9 In many bed utilisation studies marital status is used as a proxy for other social factors, such as living alone. The routine acquisition of data about the hospital utilisation patterns of those living alone is useful and important.

Marital status as currently classified by the Office of Population, Censuses and Surveys is not of sufficient value for the purpose of classifying mothers who have delivered a registrable baby. The legal status of a relationship is not as important as determining whether a mother is supported or not, although relevant definitions of what is meant by support have yet to be agreed. We **recommend** therefore that research be carried out to determine:

a. the feasibility of collecting data routinely by direct question about people living alone rather than using marital status as a proxy, and

b. the relevant factors involved in identifying support for a mother. A classification based on the person giving the main support to a mother after discharge from hospital will be assessed in the maternity pilot studies.

Once this research has been completed, the continuation of marital status in the minimum data set should be reviewed and the inclusion of an additional item covering living alone/support should be considered.

Code of general practitioner

5.10 We **recommend** that the general practitioner to be recorded is the patient's usual GP who is commonly the GP with whom a patient is registered at the Family Practitioner Committee. Those regions currently including information about general practitioners in HAA have devised their own coding systems. A national scheme of GP codes is however used extensively for the Child Health Computing System and there would be merit in adopting this national coding system for the patient information system.

5.11 General practitioners other than the patient's usual GP may, however, be responsible for different aspects of maternity care. A different GP may be responsible for:

a. Providing ante-natal care. If this occurs, we **recommend** that the code of the GP responsible for ante-natal care be included in the minimum data set for the mother replacing that for usual GP. The GP code for the baby should be that of the mother's usual GP.

b. The delivery either in hospital or at home. The GP responsible for this is recorded under the data item code number of consultant/GP responsible for care during a district spell.

c. Care after the mother has been discharged from hospital. This item is not required for statistical aggregation but may be recorded for communication locally.

Category of patient

5.12 The data item category of patient refers to the patient's administrative status and to whether the patient is admitted voluntarily or has been detained under a section of the Mental Health Act. We **recommend** the following classification:

a. NHS patient not formally detained.

b. NHS patient formally detained under Part IV of the Mental Health Act, 1959.

c. NHS patient formally detained under Part V of the Mental Health Act, 1959.

d. Private patient not formally detained.

e. Private patient formally detained under Part IV of the Mental Health Act, 1959.

f. Private patient formally detained under Part V of the Mental Health Act, 1959.

g. Amenity patient not formally detained.

h. Amenity patient formally detained under Part IV of the Mental Health Act, 1959.

i. Amenity patient formally detained under Part V of the Mental Health Act, 1959.

Method of admission

5.13 We **recommend** that the method of admission be classified as follows:

a. *Elective admissions:* patients whose admission dates are known in advance and for whom arrangements can be made beforehand. Arrangements for these admissions are usually made in or following attendance at an out-patient clinic. These admissions can be classified as:

  i. Waiting list admissions: patients admitted from a waiting list, having been given no date of admission at the time a decision was made to admit.

  ii. Booked admissions: patients admitted having been given a date at the time the admission decision was made. The date is determined mainly on the grounds of resource availability.

  iii. Planned admissions: patients admitted having been given a date as part of a planned sequence of clinical care. The date is determined mainly on social or clinical criteria (e.g. check cystoscopy).

  iv. Booked delivery admissions: women admitted electively for a stay during which it is expected they will give birth.

b. *Emergency admissions:* patients admitted to hospital when admission is unpredictable and at short notice, because of clinical need. These admissions can be classified as being arranged by:

  v. Accident and emergency department in the district: patients admitted, having arrived at the department without being referred specifically for admission.

  vi. General practitioner: patients admitted after a request for immediate admission has been made to the hospital by a general practitioner or deputy.

  vii. Bed bureau: patients admitted after contact with a bed bureau in those places where a central bed bureau determines the availability of beds.

  viii. Out-patient clinic: patients admitted direct from an out-patient clinic.

  ix. Domiciliary visit: patients admitted as an emergency, having been seen by a consultant on a domiciliary visit.

  x. Other means: patients whose admission has been arranged by means other than specified in (v) to (ix).

c. *Other admissions*

  xi. Patients who have been moved from another institution outside the district.

  xii. Babies born in a hospital in the district.

  xiii. Babies born on the way to hospital.

Source of admission

5.14 We **recommend** that the source of admission be classified as follows:

a. Usual place of residence (includes patients with no fixed abode).

b. Temporary place of residence (e.g. hotels, residential educational establishments).

c. Penal establishment, Court or police station.

d. Special Hospital.

e. NHS hospital outside district – ward for general patients or an accident and emergency department.

f. NHS hospital outside district – ward for maternity patients or neonates.

g. NHS hospital outside district – ward for patients who are mentally ill or mentally handicapped.

h. Local authority residential accommodation (including foster care).

i. Other non-NHS hospital, nursing home or health care or residential institution.

j. No previous address (includes babies born in hospital or on the way to hospital).

Need to admit date

5.15 Information about expressed demand for hospital facilities is discussed in Chapter 11, where it is recommended that information should be available about the waiting experience of all patients admitted to a hospital bed on an elective basis except maternity patients. The recording of the date on which a clinical decision was made about the need to admit a patient will provide information about one aspect of the patient's waiting experience.

Date of first ante-natal assessment

5.16 The relationship of ante-natal care to the outcome of pregnancy is not clearly established. Although there is some evidence to suggest that they are related, it is not known whether the successful outcome of pregnancy is related to:

a. the quantity of ante-natal care; the number of health service contacts made during pregnancy,

b. the start of ante-natal care; the date the mother entered the system,

c. the timing of ante-natal care; the relative frequency of health service contacts in the first, second, or third trimester,

d. the type of ante-natal care; the health professional (consultant, GP or midwife) responsible for seeing the mother, or

e. the components of ante-natal care; the different types of contact such as ante-natal assessment, relaxation classes, parentcraft classes.

5.17 More research is urgently needed in this field before it is possible to recommend a complete minimum data set for ante-natal care. Until such research has been completed, we **recommend** that good practice in ante-natal care requires the use of an agreed co-operation card and that the date of the first ante-natal assessment be included as part of the minimum data set. This is the date on which the mother was assessed and arrangements were made for ante-natal care. This is not necessarily the occasion on which arrangements were made for delivery.

Management intention

5.18 The data item management intention refers to the intended pattern of bed usage for a patient. We **recommend** that the following classification be used, and that a patient classification be derived from this data item and the length of stay (see paragraph 5.47):

a. Patient intended to stay in hospital for at least one night.

b. Patient not intended to stay in hospital overnight.

c. Patient to be admitted for a planned sequence of admissions each involving at least one overnight stay.

d. Patient to be admitted regularly for a planned sequence of days or nights who returns home for the remainder of the 24 hour period.

DATA ITEM INPUT AT START OF EACH EPISODE

5.19 We **recommend** that the following data item be input at admission and at the start of each new consultant episode:

Code of consultant or general practitioner responsible for care.

Consultant/GP code

5.20 Every consultant belongs to a specialty whose separate designation has been approved by a Royal College or by a Faculty. The recording of consultant codes in the minimum data set will enable the specialty to be automatically coded. However the use of specialty as a way of aggregating data presents considerable problems:

a. Specialties are arbitrary divisions of clinical work which may be defined by body systems (dermatology), age (paediatrics), clinical technology (nuclear medicine), clinical function (rehabilitation), group of diseases (oncology) or combinations of these factors.

b. In recent years the number of specialties has increased steadily and in 1980 DHSS Medical Manpower Statistics recognised fifty-one hospital specialties.

c. In the medical specialties, in particular, there are, in addition to specialists, general physicians with a specialist interest. For example many hospitals have a general physician with special training in gastro-enterology who will not only look after unselected emergency referrals to hospital, but will also admit selected patients with gastro-intestinal complaints referred by general practitioners and consultant colleagues.

d. Even clearly defined specialties such as neurology may have widely differing case-mixes in different centres according to the admission policies of the consultant in charge.

e. There is considerable overlap in the case-mix between some specialties. The morbidity and age distribution of patients admitted under geriatricians and physicians in many hospitals is similar. The categorisation of patients between these two groups of consultants is further weakened by the recent trend to appoint consultant physicians with special expertise and training in geriatrics rather than specialist geriatricians.

f. In a number of clinical areas it is becoming common practice for consultants of different specialties to share resources and jointly care for patients. Medical/surgical boundaries may be crossed when patients are jointly looked after by neurosurgeons and neurologists, or cardiologists and cardiothoracic surgeons. Another specialty combination which has been found to be particularly relevant to patient need is shared care by orthopaedic surgeons and geriatricians. Shared care can cause problems in identifying and recording the consultant or consultants responsible for care.

5.21 Despite the problems in recording and interpreting data by specialty, this way of aggregating data is an important tool for planning and for reviewing the way in which resources have been used. To improve the utility of this information, we **recommend** that:

a. When coding a consultant's specialty, the initial source of information should be the designation on the consultant's contract. The coding should be checked periodically against the work a consultant is actually doing and if necessary altered. With the growth of specialisation over the last twenty years many consultants have taken on new specialty interests or changed their specialty without necessarily changing their contracts. The specialty accorded an individual consultant in aggregated statistics about activity should be related to the work he is actually doing.

b. The hallmark of a general physician or general surgeon is the continued care of unselected emergency referrals. Any consultants who have such a generalist component to their work should normally be designated as general physicians or surgeons for the purposes of producing aggregated statistics. Many generalists will have a specialist interest and this should also be identified. However, aggregating data solely by consultant name will not identify what proportion of patients are general medicine or general surgery and what proportion are covered by the specialist interest. This breakdown in workload can only be derived from data about diagnosis.

c. Only specialties recognised by Royal Colleges and Faculties should be used in classifying consultants. The specialties currently recognised are listed in Table II.

d. Further work be done to identify what constitutes shared care. Attention must be given to distinguishing patient episodes in which continuing care is fully shared between two consultants from those in which the second consultant is only acting in an advisory capacity. Options for recording shared care include:

i. establishment of a recognised list of specialty combinations,
ii. the recording of simultaneous consultant episodes,
iii. the identification only of the consultant 'mainly responsible for care', or
iv. an additional item to identify retrospectively other consultants involved.

Table II Specialties using beds recognised currently by Royal Colleges

1. The Royal College of Physicians currently recognises the following specialties:
    a. Audiological medicine
    b. Cardiology
    c. Clinical genetics
    d. Clinical neuro-physiology
    e. Clinical pharmacology
    f. Clinical physiology
    g. Dermatology
    h. Diseases of the chest
    i. Endocrinology and diabetes
    j. Gastro-enterology
    k. General medicine
    l. Genito-urinary medicine
    m. Geriatric medicine
    n. Haematology (clinical)
    o. Infectious diseases
    p. Medical oncology
    q. Nephrology
    r. Neurology
    s. Nuclear medicine
    t. Paediatrics
    u. Paediatric neurology
    v. Rheumatology and rehabilitation
2. The Royal College of Surgeons currently recognises the following specialties:
    a. Accident and Emergency
    b. Anaesthetics
    c. Cardiothoracic surgery
    d. Dental surgery
    e. ENT
    f. General surgery
    g. Neurosurgery
    h. Ophthalmology
    i. Orthodontics
    j. Orthopaedics
    k. Paediatric surgery
    l. Plastic surgery
    m. Restorative dentistry
    u. Urology
3. The Royal College of Pathologists currently recognises the following specialties:
    a. Blood transfusion
    b. Chemical pathology
    c. General pathology
    d. Histopathology
    e. Immuno-pathology
    f. Medical microbiology
    g. Neuropathology
4. The Royal College of Radiologists currently recognises the following specialties:
    a. Radiology
    b. Radiotherapy
5. The Royal College of Obstetricians and Gynaecologists currently recognises:
    Obstetrics and Gynaecology
6. The Royal College of Psychiatrists currently recognises the following specialties:
    a. Child and adolescent psychiatry
    b. Forensic psychiatry
    c. Mental handicap
    d. Mental illness
    e. Psychotherapy
7. The Royal College of General Practitioners currently recognises:
    General Practice

DATA ITEM INPUT AT START OF EACH WARD STAY

5.22 We **recommend** that the following data item be input at admission and at the start of each new ward stay:

Code of ward.

Ward code

5.23 During a district spell a patient may experience a number of ward stays which may be in different hospitals in the district. All the wards used in the district during one spell of care should be recorded in the minimum data set and the ward codes should be chosen so that hospitals and groups of wards of the same category can be coded automatically. If a patient is moved to hospital care outside the district, this should be counted as a discharge, even though the patient may be moved back again to the original district as part of a continuous sequence of care.

5.24 Some patients go home for a short period of time with a view to returning to a hospital in the same district for further treatment. The piloting exercise provided some information about these patients, but we **recommend** that further work be carried out so that precise definitions can be developed. Such patients are of two main types:

a. Interval admissions as defined in paragraph 5.47.

b. Patients who, as part of a spell in hospital, go home with a view to returning within a specified period of time (usually over a weekend). Such patients on returning from home should not be considered as starting a new episode of care.

DATA ITEMS INPUT ONLY ON DISCHARGE

5.25 We **recommend** that the following items be input immediately on discharge and that the basic source be the daily ward listings:

a. date of discharge,

b. method of discharge, and

c. destination on discharge.

Method of discharge

5.26 We **recommend** that the method of discharge be classified as follows:

a. Patient discharged on medical advice.

b. Patient discharged himself or was discharged by a relative.

c. Patient discharged by Mental Health Review Tribunal, Home Secretary or Court.

d. Patient died.

e. Stillbirth.

Destination on discharge

5.27 We **recommend** that the destination on discharge be classified as follows:

a. Usual place of residence (includes patients with no fixed abode).

b. Temporary place of residence (includes hotels, residential educational establishments).

c. Penal establishment, Court or police station.

d. Special Hospital.

e. NHS hospital outside district—ward for general patients.

f. NHS hospital outside district—ward for maternity patients or neonates.

g. NHS hospital outside district—ward for patients who are mentally ill or mentally handicapped.

h. Local authority residential accommodation (including foster care).

i. Other non-NHS hospital, nursing home, health care or residential institution.

DATA ITEMS INPUT AT THE END OF EACH CONSULTANT EPISODE

5.28 We **recommend** that the following items be input for each consultant episode when available and that the basic source of these items be the patient's medical record:

a. codes of diagnoses, and

b. codes of operations and operative procedures.

These data should be obtained from a discharge summary. A letter sent immediately on discharge to the general practitioner does not contain sufficient information to form the basic data source.

Codes of diagnoses

5.29 The most criticised aspect of the current patient systems is the quality of the diagnostic information. Aware of the considerable problems and the cost of capturing and coding diagnostic data, we have considered two main questions:

a. Should diagnostic data be collected on all patients, a sample (e.g. 1 in 10 of all discharges) or by survey (e.g. carried out in two or three regions or for a sample period only)?

b. What system of diagnostic classification should be used?

5.30 Until recently the major current patient based information system, Hospital Activity Analysis, has been little used for administrative purposes. However, in recent years with the advent of new ways of allocating funds within the NHS, information about groups of patients with common diagnoses has become increasingly important for management purposes. The monies allocated to health districts are becoming more closely related to the types of clinical work that are being performed. Expensive specialist work being done by a general physician or general surgeon can be identified in the patient information system only from patients' diagnoses.

5.31 Not only is there a closer relationship between resource allocation and the clinical work done, there is also increasing interest among clinicians who want to review clinical activity. As information about diagnoses is used more frequently for both management purposes and clinical review, the quality of data will improve. We therefore **recommend** that diagnostic data be collected on all patients covered by the patient information system.

5.32 A number of systems of diagnostic coding other than the currently used International Classification of Diseases (ICD) have been considered. The use of abbreviated coding systems, of the kinds designed for use in developing countries, is unsatisfactory in that invaluable detail that is available in mortality information would be lost in corresponding morbidity data.

5.33 There is no evidence that the adoption of a code less detailed than ICD would save resources. A high proportion of patients are covered by a limited set of ICD codes; in the 1979 HIPE, 50% of hospital discharges were covered by 75 diagnoses. The major problem in collecting diagnostic data for aggregation purposes is the extraction of the data from clinical notes. Simplifying the coding system will not solve this problem which can be improved only by the active co-operation of clinical staff in the provision of an appropriate discharge summary.

5.34 We **recommend** that diagnostic coding be done using the full 9th revision ICD code to four digits with allowance for fifth digit and * and † codes, as recommended in Health Notice 78(11). Accident statistics are discussed in Chapter 14, and the use of the ICD E codes is recommended. For neonates diagnoses should be coded by the British Paediatric Association classification which is compatible with ICD 9.

5.35 Statistics about the number of first admissions to a psychiatric hospital or unit are of considerable interest in epidemiology and act as indicators of the future workload for hospital and non-hospital services. We **recommend** that the following information be collected on all patients discharged from a psychiatric hospital or unit and that it be coded not as a separate item in the minimum data set but as a V code of the ICD:

Whether the admission is the first ever admission to a hospital bed in the care of a consultant in any of the mental health specialties, classified as:

a. not previously admitted,

b. previously admitted in this district, or

c. previously admitted in another district.

5.36 There is increasing interest in the provision of intensive and special care to neonates. Information about the number of babies receiving care is not easily obtainable from a facility return because of the different ways in which districts provide these forms of care. We thus **recommend** that the type of care received by each neonate discharged from hospital be recorded and that it be coded as a V Code of the ICD. Definitions of normal, special and intensive care are being developed and they will be evaluated in the maternity pilot studies.

5.37 The number of diagnoses recorded should as far as possible equate with current medical practice. We **recommend** that it should be possible to record at least six diagnoses for each consultant episode, one of which should be the 'main condition treated' in line with the recommendations of ICD 9 and HN 78(11). The selection of the primary diagnosis should be a clinical responsibility.

5.38 We recognise the importance of good quality diagnostic information and to improve its collection we **recommend** that:

a. Clinicians record diagnostic data in medical notes in ways that facilitate coding. The use of a structured discharge summary has much to commend it.

b. Coding of diagnostic data be done at local level so that those responsible have easy access to clinicians recording the data.

c. Appropriate training should continue to be given to those responsible for diagnostic coding.

d. Adequate resources should be devoted to this task.

Codes of operations/ operative procedures

5.39 Data on the nature of operative procedures may distinguish the main spell for a surgical condition from preliminary spells for investigation and subsequent ones for complications. The nature of the operation is also important in identifying the main diagnosis in those patients with more than one diagnosis recorded in the notes. We **recommend** that it should be possible to record at least four operations or operative procedures for each consultant episode.

5.40 The classification of operation codes currently used was developed by the OPCS in 1975 but it is now several years out of date due to the continuous momentum towards new operative techniques. This is a matter of major concern. The OPCS classification is based on the technical nature of an operative procedure but not on the resources required to perform it. Information about the use of operating theatres is discussed in Chapter 12. Continued use of the current operation codes will rapidly bring the system into disrepute, and we **recommend** that as a matter of urgency the OPCS provide operation codes which reflect current clinical practice and develop procedures for the frequent updating of the classification.

5.41 In maternity some operative procedures associated with delivery are of such importance that we **recommend** that they be recorded as separate items in the clinical notes but coded as operative procedures in the patient information system. These procedures are:

a. episiotomy and repair of perineal tear, and

b. sterilisation when performed during a spell which produced a registrable birth.

Information about the method of labour onset and method of delivery will be collected by birth/delivery notification.

5.42 In psychiatry there is considerable interest in the frequency with which electroconvulsive therapy is administered. This subject is discussed in Chapter 7. To allow a count to be made of the number of patients using a hospital bed that receive ECT treatment, we **recommend** that the administration of ECT during a spell in hospital be recorded as an operative procedure in the patient information system.

INFORMATION DERIVED FROM THE MINIMUM DATA SET

5.43 Three items of information that can be derived from the minimum data set have been considered in detail namely:

a. duration of stay,

b. a patient classification, and

c. patient care group.

Duration of stay

5.44 The basic data in the patient information system from which to derive duration of stay information are the dates of admission and discharge, or transfer in the case of episodes or stays within the district spell. The recording of the actual time of these events is unnecessary except in the case of the neonate.

5.45 There are three possible methods of calculating length of stay but the method of choice will depend on the purposes for which the information is required. The methods are:

a. The present practice in HAA and Hospital In-Patient Enquiry which is to subtract the date of admission from the date of discharge, and thus to ascribe a stay of 'zero' days to patients admitted and discharged on the same day. Lengths of stay calculated by this method are thus measured in nights in hospital rather than days.

b. The addition of one day to the arithmetic difference between date of admission and discharge. It is not practical to apply this method to each individual episode or stay within a district spell.

c. The assignment of a length of stay of half a day to all patients who do not stay overnight while ordinary admissions are dealt with as under a.

5.46 On balance we see merit in continuing the current practice and thus **recommend** that durations of stay be calculated by subtracting the date of admission or transfer from the date of discharge or transfer. Thus in calculating the average length of stay for a specialty, the total number of episodes is credited and those with less than a day's stay acquire a notional stay of 'zero' days. It is acknowledged that a notional stay of 'zero' days fails to recognise that a bed has been occupied. However, we do not consider traditional measures such as percentage bed occupancy to be appropriate as indicators of the efficiency of bed use (see paragraph 9.39). When producing data output such as the average length of stay for a specialty it is useful in the first instance to identify separately ordinary and day case admissions.

Patient classification

5.47 By combining the data item management intention with the actual length of stay patients can be classified and we **recommend** the following classification:

a. *Ordinary admissions;* patients admitted with the expectation that they will remain in hospital for at least one night including those admitted with this intention who leave hospital for any reason without staying overnight. Patients admitted with the intention of not staying overnight but who fail to return home as scheduled should be counted as ordinary admissions.

b. *Day case admissions;* patients admitted during the course of a day with the intention of receiving care or treatment which can be completed in a few hours so that they do not require to remain in hospital overnight, who return home as scheduled. If this original intention is not fulfilled and the patient stays overnight, such a patient should be counted as an ordinary admission.

c. *Regular day admissions or night admissions;* patients admitted regularly for a planned sequence of days or nights who return home for the remainder of the 24 hour period. If the intention is not fulfilled and one of these admissions should involve a stay of at least 24 hours, such an admission should be classified as an ordinary admission. The first admission of a series must be input on the computer but this is optional for subsequent admissions. If all admissions are not computer processed, a count of total admissions will have to be obtained from ward listings.

d. *Interval admissions;* patients admitted for a planned sequence of admissions each involving at least one overnight stay.

Patient care groups

5.48 The implementation of the NHS Planning System in 1976 introduced, for strategic planning purposes, the analysis of clinical services on a care group basis. The DHSS Programme Budget is an attempt to provide such an analysis of financial, manpower and activity data at a national level. The current classification of care groups has been criticised as being inappropriate for local use.

5.49 The DHSS intend to retain the care group concept for planning purposes but will refine the composition of the current care groups to make them more relevant to existing patterns of clinical care. Such refinement, however, will have to await better costing information. For example, although data about the total usage of hospital beds by the elderly or children will be readily available from the patient information system, costing information currently cannot be aggregated in this way. The data items recommended in this Chapter allow aggregation by a number of factors to produce care group information which will be more relevant to local use.

DATA ITEMS CONSIDERED BUT NOT INCLUDED IN THE MINIMUM DATA SET

5.50 During the various phases of discussion, consultation and piloting leading up to the production of this Report, many suggestions have been made about additional items to be included in the data set. However, none has met the three criteria of being required by district managers, being easy to collect and code and being affordable in all districts in the next three years. Items put forward include:

a. patient name,
b. national number (e.g. NHS number),
c. social class derived from occupation,
d. ethnic origin,
e. place of birth,
f. religion,
g. follow-up arrangements on discharge,
h. vaccinations given, and
i. adverse reactions to drugs.

Patient name

5.51 There is understandably much concern about the holding of named patient information on central or regional computers. We do not consider that for the patient information system this item is necessary or desirable as the administrative output of the system will be in aggregated form. When clinicians wish to use the system as a diagnostic index, the district patient number should provide adequate information to obtain the appropriate case notes. In special circumstances a clinician may wish names to be included and local provision should be made for this.

National number

5.52 We see advantage in using a national number to identify patients. Although all health service users have a unique number, the NHS number, which would allow the national linking of district spells, it has been little used and consequently has proved difficult to collect. We reluctantly accept that in the foreseeable future there is no prospect of a national number being used universally but would like to encourage local experiments with the use of the NHS number. However, in Chapter 6 we recommend that the NHS number for neonates be obtained from the Registrar of Births and Deaths. The Oxford RHA currently collects data which are linkable region wide and other regions may see merit in adopting this practice.

Social class

5.53 There is great interest in the extent to which different social classes use the health service. Yet, as the working group looking at Inequalities in Health Care noted, there is a relative lack of social class data in statistics relating to morbidity and health service utilisation. In order to achieve a relatively complete and accurate social class classification of hospital patients it is necessary to obtain detailed information on type of occupation and status (e.g. foreman, manager). This should be collected by a clerk who has knowledge of the requirements of the classification. In addition, precise rules need to be adopted for classifying retired people, women, and minors, which are groups that always pose particular problems in an occupation based classification.

5.54 Registrars of Births, who are specially trained, collect information about parental occupation when a birth is registered and this information is of high quality. Currently Registrars collect the father's occupation for all births except illegitimate births when the mother's occupation is recorded, if she is the only person to register the birth. Changes to this practice are currently being considered. In Chapter 6 we recommend that parental social class, derived from occupational data obtained by Registrars, be included in the minimum data set for registrable births.

5.55 In view of the difficulties inherent in the collection of accurate occupational data and as the NHS does not currently have staff suitably trained to collect it, alternative methods of capturing socio-economic data should be explored. Although occupation has not been recommended as an item in the minimum data set, we recognise the potential value of knowing the social class of hospital users and **recommend** that research should be carried out into assessing ways of collecting accurate social class data about patients using a hospital bed. We have already commissioned work to evaluate a method of social classification based on a patient's post code (a data item in the minimum set).

Ethnic group, religion, country of birth

5.56 Ethnic group is another important personal detail that presents considerable difficulty in its collection. Some information about ethnic group may be obtained from the knowledge of religion and country of birth but such data items need critical evaluation and it may well be more appropriate to collect them through properly planned ad hoc or routine surveys. The value of the latter will depend to some extent upon the availability of suitable denominators from the population census or other sources, so that utilisation rates can be calculated.

District discretion

5.57 Although none of the items listed at paragraph 5.50 has been recommended for the minimum data set to be collected in every district, it must be stressed that the data set is a minimum. It is our view that many districts will need and wish to collect more data for local purposes even though comparable data from other health districts may not be available.

6 Information about registrable births

MINIMUM DATA SET FOR MOTHER AND BABY

6.1 In Chapter 4 recommendations are made about the data sets which should be brought together to form a comprehensive record for each registrable birth. Four data sets comprise the minimum data set while the two clinical options should be collected when required locally. The six components are:

a. Minimum data set for each registrable birth
  - minimum data set for mother
  - minimum data set for each baby
  - birth notification for each baby
  - data items obtained from the registration of each birth.

b. Optional clinical data sets
  - maternity option
  - neonatal option.

The full list of data items in both the minimum and optional data sets is shown in Table III.

Table III Maternity data items and methods of collection

A. *Data items in the minimum data set collected by methods used for all patients*

Mother	*Each baby*
Number/identifier	Number/identifier
—	Sex
Address code	Address code
Date of birth	Date of birth
Marital status	—
Category of patient	—
GP code	GP code
Method of admission	Method of admission
Source of admission	Source of admission
Date of 1st a/n assessment	—
Intended management	—
Wards occupied	Wards occupied
Operative procedures	Operative procedures
Method of discharge	Method of discharge
Destination on discharge	Destination on discharge
Consultant/GP codes	Consultant/GP codes
ICD diagnoses	BPA diagnoses (ICD compatible)

B. *Data items collected by notification of each birth*

Mother	*Delivery*	*Identifiers*
Parity	Place of delivery	Mother's number/identifier
	Original intention	Mother's date of birth
Baby	Reason for change	Baby's number/identifier
Birth order	Number of babies	Baby's date of birth
Live/still birth	Length of gestation	Baby's time of delivery
Birth weight	Method of labour onset	
Resuscitation	Method of delivery	

C. *Data items obtained from the registration of each birth*

Parental occupation

Baby's NHS number

cont'd

Table III—continued

D. *Data items in the clinical options*

Mother
Height
Blood group
Previous pregnancies

Delivery
Length of 1st stage
Length of 2nd stage
Pain relief given
Presentation of foetus

Each baby
Head circumference at birth
Birth length
Apgar score
Hips examination
Jaundice presence
Type of feeding established
PKU + BCG performed
Gestation (paediatric assessment)
Additional diagnoses
Follow-up arrangements

6.2 The items in the minimum data set to be collected on all patients using a hospital bed are discussed in Chapter 5. The data sets for mother and baby are identical to that for any other patient except in the following respects:

a. minimum data set for mother:

  i. If the general practitioner responsible for ante-natal care is not the patient's usual GP, the former should be recorded (see paragraph 5.11).
  ii. The item date of decision to admit is not applicable and should be replaced by the date of the first ante-natal assessment (see paragraph 5.17).

b. minimum data set for baby:

  iii. The general practitioner code should refer to the mother's usual GP (see paragraph 5.11).
  iv. Diagnoses should be coded using the British Paediatric Association classification which is compatible with the 9th revision of the ICD (see paragraph 5.34).
  v. The type of care received by a neonate should be recorded and coded as a V code of ICD (see paragraph 5.367).

Some of the items are not required for the baby's record.

BIRTH NOTIFICATION

6.3 An essential element of the data required about a registrable birth is that obtained from the statutory birth notification. Many districts currently use the standard notification form developed for the Child Health Computing System. It has been agreed that this standard form will be amended in the light of the recommendations made in this Report.

6.4 We **recommend** that the following items should be collected by birth notification for all registrable births:

a. number of previous pregnancies resulting in a registrable birth (parity);

b. birth order (if a multiple birth);

c. live/still birth: the latter classified as ante-partum, intra-partum or indeterminate;

d. birth weight recorded in grams;

e. method of resuscitation used at delivery: coded in the way recommended by the British Paediatric Association for the Neonatal Discharge Record;

f. place of delivery;

g. initial intention for place of delivery;

h. reason for change from original intention if different;

i. date and time of delivery;

j. number of babies;
k. length of gestation assessed at the onset of labour;
l. method of onset of labour; and
m. method of delivery.

Place of delivery

6.5 We **recommend** that the place of delivery should be classified as follows:
a. At a domestic address.
b. In NHS hospital – consultant ward.
c. In NHS hospital – GP ward.
d. In NHS hospital – consultant/GP ward.
e. In private hospital.
f. In other hospital or institution.
g. None of the above a. – f.

Initial intention

6.6 Many deliveries do not occur in the place initially intended. The initial intention for place of delivery is that designated by the general practitioner and midwife or by the general practitioner and hospital staff and this should be recorded. This decision is normally made when the mother is assessed for delivery and, as a result of this, formal arrangements are made. The classification of the originally intended place of delivery should be the same as used for the actual place of delivery (see paragraph 6.5).

Reason for change

6.7 If the place of delivery is different from the place initially intended, we **recommend** that the reason for the change be classified as follows:
a. Decision made during pregnancy because of change of address.
b. Decision made during pregnancy for clinical reasons.
c. Decision made during pregnancy for other reasons.
d. Decision made during labour for clinical reasons.
e. Decision made during labour for other reasons.
f. Occurred unintentionally during labour.

It would be of use to identify in more detail the reasons for change of place, and we **recommend** that further work be done to include a well tested classification in the minimum data set.

Length of gestation

6.8 We **recommend** that the WHO definition of gestation be used. This states: 'The duration of gestation is measured from the first day of the last menstrual period (LMP). Gestational age is expressed in completed days or completed weeks; e.g. events occurring 280–286 days after the onset of the last menstrual period are considered to have occurred at 40 weeks gestation'.

6.9 Alternative methods of assessing gestation are:
a. clinical assessment of uterine size,
b. ultrasonic measurements, and/or
c. retrospective clinical assessment of the new born by a paediatrician.

The WHO definition is recommended for those cases where LMP is thought to be reliable. For the remainder a best estimate based on likely LMP and ultrasonic measurement is to be recommended. In the neonatal optional data set there is a data item to allow paediatricians to record their own estimate of the length of gestation.

Method of onset of labour

6.10 We **recommend** that the method of onset of labour be classified as follows:

a. Spontaneous; regular contractions or spontaneous rupture of the membranes leading to labour within 48 hours.

b. Elective caesarean section; a section carried out before the onset of labour; or, in the case of a planned elective operation, immediately following the onset of labour, when the decision was made before labour.

c. Surgical induction; by amniotomy.

d. Oxytocic drugs; including administration of agents either orally, intravenously or intravaginally with the intention of initiating labour.

e. Combination of surgical induction and oxytocic drugs.

If these methods have been used to accelerate rather than induce labour, they should not be recorded under this item.

Method of delivery

6.11 We **recommend** that the method of delivery be classified according to the 9th revision of the ICD. In summary these methods are:

a. Spontaneous, vertex.

b. Spontaneous, other cephalic.

c. Low forceps, not breech.

d. Other forceps, not breech.

e. Ventouse.

f. Breech.

g. Breech extraction.

h. Elective caesarean section.

i. Emergency caesarean section.

BIRTH REGISTRATION

6.12 Although we have not recommended that NHS number and social class should form part of the minimum data set for all patients, both these items are obtainable for a registrable birth from the Registrar of Births and Deaths. He is responsible for generating the NHS number and specially trained to obtain data about occupation. We therefore **recommend** that the following data items be obtained from the Registrar for inclusion in the minimum data set for each registrable birth:

a. parental occupation, and

b. NHS number of baby.

CLINICAL OPTIONS

Maternity option

6.13 We **recommend** that the following data items be included in the maternity clinical option. This comprises items which should be coded and computerised if wanted locally by consultant obstetricians or general practitioners and if recorded by them in a structured format:

a. maternal height,

b. maternal blood group,

c. more detailed information about the foetal outcome of previous pregnancies,

d. length of first stage of labour,

e. length of second stage of labour,
f. pain relief, and
g. presentation of foetus before labour.

The classifications to be used should correspond with the recommendations of the Royal College of Obstetricians and Gynaecologists which are incorporated in the Standard Maternity Information System.

NEONATAL OPTION

6.14 We **recommend** that the following data items be included in the neonatal clinical option. This comprises items which should be coded and computerised if wanted locally by consultant paediatricians and if recorded by them in a structured format:

a. birth head circumference,
b. birth length,
c. Apgar score,
d. examination of hips,
e. presence and severity of jaundice,
f. type of feeding established,
g. performance of PKU and BCG,
h. paediatrician's assessment of length of gestation,
i. coding space for two additional diagnoses, and
j. arrangements for follow-up care.

The classifications to be used should correspond with the recommendations of the British Paediatric Association which are incorporated in the Neonatal Discharge Record.

7 Additional information about psychiatric and long stay patients

Introduction

7.1 A significant proportion of patients in hospital remain there for long periods of time and indeed may not be discharged except by their death. Such patients are commonly in long stay units for the elderly or hospitals or units for the mentally ill or handicapped. The inclusion of an admission input to the patient information system will allow a limited amount of data to be held on computer about these long stay patients. However, clinical and functional states may change and to obtain up-to-date information about this group of patients requires a regular census.

7.2 Although the general philosophy of the Steering Group is that the information needs of the district tier will meet adequately the requirements of higher tiers such as the DHSS and regions, there are exceptions to this working rule. In psychiatry patients are detained in hospital under sections of the Mental Health Act and the Secretary of State has a responsibility to monitor the use of powers to restrict the patient's liberty. There is also considerable concern about certain methods of treatment. Thus the DHSS needs to obtain information about the working of the Mental Health Act and the amount of electroconvulsive therapy being administered.

ANNUAL CENSUS

Psychiatric patients

7.3 In order, primarily, to determine whether patients in psychiatric institutions are appropriately placed, we **recommend** that an annual census be carried out on an agreed day on all patients who have been in mental illness/mental handicap units or hospitals for a year or more, and on all detained patients. The census will include formal patients who are on any form of leave of absence including leave on trial prior to discharge, as well as detained patients temporarily transferred to another hospital or unit.

7.4 We **recommend** that as a minimum the following data items should be available for each patient. Some will already have been captured by the patient information system, others will have to be specially collected:

a. available in the patient information system:
   i. district patient number,
   ii. sex,
   iii. geographical code of current (or last) home address,
   iv. date of birth,
   v. marital status,
   vi. date of admission,
   vii. code of consultant currently responsible for care, and
   viii. code of ward currently occupied;

b. to be specially collected in the census:
   ix. codes of current diagnoses,

x. whether or not electroconvulsive therapy had been administered in the previous year,

xi. current legal status and mental category (if detained), and

xii. date that the current period of detention commenced (if detained).

7.5 Definitions and classifications for items i. to x. in paragraph 7.4 have been given in the appropriate sections of Chapter 5. Legal status and mental category should be recorded as defined in the Mental Health Act 1959.

7.6 For the purposes of the effective management of health resources and in particular the appropriate placement of individual patients, the classification of a patient's social behaviour or functioning may be of greater use than diagnosis or mental illness status. Simple classifications based on behaviour have been used to measure the severity of a clinical condition and the likelihood of discharge from hospital. Where possible districts should adopt one of these classifications for inclusion in the census. It is for local decision which system is used but a region may wish to negotiate with districts for the introduction of the same system throughout the region. With further experience of using these classifications, it may be possible to move towards the use of one system nationally and incorporate social functioning as an item in the minimum data set, thus allowing national comparisons to be made.

Long stay patients in non-psychiatric specialties

7.7 Consideration has been given to whether a census of long stay patients in non-psychiatric specialties should form part of the information that is essential to the management of services by a district. Although in our interim report this was not considered a minimum requirement, many districts, responding to our recommendations, stressed the importance of extending the census to all patients who have been in hospital for longer than a year. However, given the other important changes being recommended, we have decided that for the time being such a census should not form part of the minimum data set. It is good administrative practice to carry out a regular census of all long stay patients and, if a significant number of districts do this and wish to compare their results, then the inclusion of such a census will be reconsidered at a later date as a minimum requirement.

7.8 A census of long stay elderly patients can be carried out in a similar way to the psychiatric census, information being obtained from the patient information system and a few data items about current status being specially collected.

LEGAL STATUS

7.9 Both the DHSS and health authorities require information about patients detained in mental illness/mental handicap units and hospitals. The DHSS is obliged to review the application of the law governing the detention of patients. This task becomes particularly important when, as proposed, amending legislation is enacted; it will be essential to monitor the effect of legislative changes. Health authorities need not only to know about practice in their own district but should also compare patterns of care and the use of powers of detention in their hospitals with those in other districts.

7.10 We have considered the need for information about:

a. The number of patients admitted under different sections of the Mental Health Act during a specified time period.

b. Changes in legal status; the number of times sections are changed during a specified time period.

c. Patients detained on a specific day; a census can give a snapshot picture of the number of patients and the length of time for which they have been detained.

d. The number of patients discharged who had been detained and the total length of time of their detention.

7.11 In previous paragraphs of this Report recommendations are made about the collection of data about legal status, namely:

a. An abridged form of legal status should be collected on admission (see paragraph 5.12).

b. In the annual census a record should be made of legal status, mental category and the date the current period of detention commenced (see paragraph 7.4).

Table IV District summary of patients admitted under sections of the Mental Health Act returned annually

LEGAL STATUS OF PATIENT	MENTAL CATEGORY AND SEX OF PATIENT									
	Mental Illness		Psychopathic Disorder		Subnormality		Severe Subnormality		Other	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1. TREATED INFORMALLY										
2. DETAINED UNDER MH ACT 1959 SECTIONS a. Section 25										
b. Section 26										
c. Section 29										
d. *Section 60										
e. **Section 60										
f. †Sections 72, 73										
g. ††Sections 72, 73										
h Section 135										
i. Section 136										
3. DETAINED UNDER PREVIOUS LEGISLATION OR OTHER ACT										

Notes: * with section 65 restriction. ** without section 65 restriction. † with section 74 restriction. †† without section 74 restriction.

7.12 To obtain detailed data about the number of detained patients admitted to hospital and the total number of changes in legal status each year, we **recommend** that each district complete an annual return for submission to region and onward transmission to DHSS. The data required are shown in Tables IV and V.

Table V District summary of changes in legal status returned annually

ORIGINAL LEGAL STATUS	LEGAL STATUS AFTER THE CHANGE					
	INFORMAL	SECTION				OTHERS SPECIFY
		25	26	29	30(2)	
INFORMAL	▨					
25		▨	▨		▨	
26		▨	▨	▨	▨	
29			▨		▨	
30(2)			▨		▨	
60*		▨	▨	▨	▨	
72* 73*		▨	▨	▨	▨	
135						
136						
OTHERS SPECIFY						

Note: *With or without restriction.

This table should record all changes in legal status of PATIENTS ADMITTED which occur during the year in the range of categories indicated, irrespective of when the patient was admitted or of his legal status on admission.

7.13 Consideration has been given to the recording of all the changes in legal status as part of the patient information system. As yet there is little experience in doing this and thus it has not been recommended as a minimum requirement. If, however, a mental hospital or unit is covered by a local computerised patient administration system, we **recommend** that the recording of changes in patients' legal status be tried and the feasibility of this task be evaluated formally.

7.14 The Home Office Statistical Department maintains a named index of persons detained in hospital under Part V of the Mental Health Act. The data collected for this purpose are inadequate for the needs of DHSS and conversely the Home Office requirements would not be met by the return recommended in paragraph 7.12. We therefore **recommend** that the half yearly return of Part V patients to the Home Office be continued.

ELECTROCONVULSIVE THERAPY

7.15 The administration of electroconvulsive therapy (ECT) is a controversial subject which has aroused much public concern in the past and is likely to continue to do so following the controlled trials recently published, the research undertaken by the Royal College of Psychiatrists and the further research into specific indications for ECT. The DHSS requires sufficient information about ECT to monitor not only the general level of ECT and how this is changing over time, but also variations in use between health districts.

7.16 In previous paragraphs of the Report recommendations are made about the collection of data on the administration of ECT namely:

a. On discharge the administration of ECT should be coded as an operative procedure (see paragraph 5.42).

b. In the annual census a record should be made of whether ECT has been administered in the previous year (see paragraph 7.4).

Information derived from these data should give a reasonable estimate of the total number of patients using a hospital bed who have been given ECT treatment during the course of a year.

7.17 Consideration has been given to the feasibility of recording the total number of courses of ECT administered and the number of patients receiving a first treatment in any year. The problems of data capture are too great to commend the collection of these data as part of the minimum set. However, it is possible to collect data about the total number of ECT treatments administered, and we **recommend** that an annual return be collected on a district basis which includes two items, namely:

a. total number of individual treatments administered to patients during their spell in hospital, and

b. total number of individual treatments administered to other patients.

The return should be submitted to region for onward transmission to DHSS.

8 Nationally available information about the use of beds

Introduction

8.1 The information available for national purposes about patients in hospital and about the use of beds is currently obtained from the Hospital In-Patient Enquiry (both General and Maternity), the Mental Health Enquiry, the SH 3 return and the regional HAA systems. In Chapter 4 it is recommended that the current systems should be amalgamated and that in future each region should have a computer record for all consultant episodes as part of an integrated patient information system.

8.2 Health authorities will have access to the data about their own region, but there is increasing interest in comparing local bed utilisation patterns with national statistics or with figures from districts in other regions available on a national basis. Routinely available tabulations provide a starting point for comparison, but there is frequently a need to progress to more detailed analyses to gain an understanding of specific potential problems so that appropriate action can be taken. For example, simple aggregated statistics used to review lengths of stay in a specialty may indicate that the distribution of local figures differs markedly from the national pattern. In order to understand the determinants of the difference, it will be essential to make comparisons of factors such as age/sex mix, diagnostic case-mix and the extent of transfers in and out of hospital. Routine tabulations may be used to scan for potential problems, but more refined information available on a national basis may be needed to understand them. Health authorities also need to have information about patients resident in their authority who have been treated outside the authority and vice versa.

8.3 Research workers, often working in collaboration with health authorities, contribute greatly to the understanding of the health care process by measuring the occurrence and distribution of diseases which require hospitalisation. In order to define the impact of disease on sub-groups of the population, and to describe geographical variation and the changes over time in the occurrence of hospitalised diseases, researchers require access to detailed data, particularly those about diagnoses and operations, on a national basis.

8.4 The DHSS needs information about bed use for:

a. Policy development. Detailed statistical analyses may be required when pursuing issues arising from a preliminary analysis of simple tabulations.

b. Resource procurement and allocation. To prepare and argue the case for adequate funding for the NHS, the DHSS requires ready access to detailed information about the pattern of care in hospital. Information is also needed for the operation of the resource allocation system, for the monitoring of the system's effects and for the development and improvement of the existing system.

c. Accountability. Health authorities are accountable to the Secretary of State and the Secretary of State to Parliament for the setting of policies and priorities for the use of NHS resources, and for the use of resources to achieve those objectives. The Department thus has a responsibility to monitor the use of such resources and substantial information is needed centrally in a form whereby resources (both money and manpower) can be related to activity.

d. Research and development activities. Both DHSS and OPCS carry out a range of epidemiological, operational research and economic studies which contribute to policy development and service planning.

The national collation of data

8.5 The central collation of data about consultant episodes raises not only questions of confidentiality, but also problems of sensitivity and political acceptability, particularly if it were possible to compare in detail the activity of individual doctors or institutions. During our work we have been aware of both the confidentiality and sensitivity issues and have tried to strike a balance between what is considered desirable, what is technically feasible and efficient, and what is acceptable to the public, NHS managers and in particular to hospital consultants. The factors which we have considered are:

a. the possibility of bringing together the current systems collating national data,

b. the coverage of the data base,

c. the data items, and

d. the administrative arrangements.

8.6 It has proved difficult to reach an agreed view about the coverage and content of the data which should be collated centrally and we have received very differing opinions. The subject matter is complex and there are different perceptions of the need for central data collation and the practicability of achieving it. We have made some definite recommendations; but as we have not yet had the opportunity to consult widely about this part of our work, this Chapter contains a considerable number of proposals about matters that require further work and discussion. It is envisaged that final decisions about the coverage and content of the data to be collated centrally will be made before the end of 1982.

A unified system

8.7 Given the need of the NHS, academic researchers and the DHSS not only for regular but also ad hoc information on a countrywide basis and assuming that an integrated patient information system will exist in each region, we **recommend** that each region contribute data to a single national system which will replace the three current ones, the Hospital In-Patient Enquiry and its maternity component both administered by OPCS, and the Mental Health Enquiry run by the DHSS.

8.8 The NHS have great respect for and confidence in the expertise of the OPCS and in the high standards of confidentiality maintained in handling data about individuals. As a government department without direct responsibilities for government policy the OPCS is felt to be independent of the political process. The general acceptability of our recommendations will depend on the confidence that the public and the professions, particularly the clinicians, have in the organisation responsible for handling the data and thus the NHS members of the Steering Group **recommend** that the data be held by the OPCS.

Coverage and records to be included

8.9 We **recommend** that further work and detailed consultation be carried out before final recommendations are made about the coverage of the system and the records to be included. Paragraphs 8.10–8.16 contain our tentative proposals which we put forward for discussion.

8.10 The coverage of the current national patient information systems comprises 100% of patient records processed centrally in the Mental Health Enquiry and a 10% sample obtained for both the general and maternity components of the Hospital In-Patient Enquiry. The re-structuring of the NHS would necessitate an increase in the sample size for HIPE, if diagnoses and operative procedures are to be compared between authorities because districts are in general much smaller than the former area health authorities. Further, rare conditions are analysed less adequately from a sample than from complete coverage.

8.11 There are differences between regions in the ways that the 10% sample for HIPE is drawn and some regions have experienced technical problems in obtaining an appropriate sample. An additional problem in an integrated patient information system would arise if samples had to be drawn of different sizes for different groups of patients (e.g. requiring 50% of records for mentally ill patients but only 20% of records for general patients).

8.12 We propose that a data set should be transmitted centrally about all the consultant episodes which are recorded on computer at region. The OPCS will be installing a new computer in 1984 and their existing plans include a contingency margin of computing time which could be used to process a complete data file, at least to the extent of producing the analyses currently available in HIPE, from tapes which have already been edited and linked at the regions, given a relatively modest increase in staff and peripheral equipment at OPCS. The OPCS could also produce national analyses and inter-authority comparisons on hospital admissions and bed usage, including those which are needed for resource allocation purposes. Each region could also be provided with a tape containing data about those patients resident in the region who were treated in other regions. However, these developments would be conditional on the regions being able to prepare the computer tapes to an acceptable standard of accuracy and on time.

8.13 The holding of data about all patients makes the data more sensitive than if only a sample of records is transmitted centrally. This fact has been taken into account in our work on the data items and on administrative arrangements, and we believe that our proposals, when considered as a whole, will be acceptable and helpful to clinicians.

8.14 We propose that submitted tapes contain data in respect of each consultant episode, with the ability to link these into district spells. A complete data set may not be available for each episode occurring during the time period covered by the submission, because:

a. the patient may have been admitted but not yet discharged (an unfinished episode); or

b. the record of a patient discharged may not include clinical data because they are not yet available (an incomplete data set).

8.15 If statistics are to be compiled on the basis of all patients who have used a bed during the period, data on unfinished episodes are essential. Equally the absence of episodes with an incomplete data set will delay information of a non-clinical nature, until all the clinical data are available. Thus we propose that tapes submitted from regions also contain details about all patients current during the period, recognising that for some patients there will be an incomplete data set and that others will be recorded as unfinished episodes.

8.16 To permit the efficient central processing of data and the speedy production of data output, we propose:

a. The data be submitted quarterly.

b. The means of transmission be magnetic tape or other appropriate computer media as agreed with the NHS.

c. The basic data be submitted within two months of the end of the relevant quarter and a complete record of each patient, containing clinical details, be submitted within a maximum of six months after the quarter of discharge.

d. The data be submitted to agreed standards of data content, validity, coding structures and edit procedures.

e. The data be submitted in most cases from the region. Special arrangements may have to be made for postgraduate hospitals administered by the special health authorities or boards of governors.

Data items

8.17 The data items held at region about each consultant episode are described in Chapters 5–7. To maintain the confidentiality of patient data and to ensure the acceptability of data content to clinicians, certain modifications will have to be made to the data items before they are transmitted centrally.

8.18 It is mandatory that any data submitted to or held centrally should not allow the identification of an individual patient nor should the case note record number be identifiable. In some rare instances post codes might identify an individual and thus full post codes should not be transmitted centrally. The data required for national analysis are the health authority and local authority in which the patient is resident. We thus **recommend** that codes for district health authority of residence and local authority of residence be submitted. These data can be automatically derived at the regional level from the patient's post code. This recommendation should be reviewed if population estimates for small areas become available.

8.19 At the regional level each patient's data set will contain the identity of the consultants who were responsible for care. This item is not required for national analysis and we **recommend** that only the specialty of the consultants responsible for care be submitted centrally.

8.20 The central submission of the general practitioner code, held at region, is not required and we **recommend** that it should not be transmitted.

8.21 Although the analysis and the comparison of data about activity in individual hospitals may be appropriate at local level where local circumstances and patient flows are recognised and understood, such analysis made at national level is misleading where clinical specialties are organised on a district basis. Therefore NHS members of the Steering Group consider that codes identifying individual hospitals should not be submitted centrally.

8.22 However, for the foreseeable future at least, the DHSS see a need for some information at hospital level in the pursuit of the tasks set out at paragraph 8.4. This includes the need to link activity, finance and manpower information and until the working groups reviewing manpower and finance have reported, it will not be clear how this is to be achieved. Therefore the DHSS members are strongly of the view that the facility to identify hospitals should be available.

8.23 It has not been decided whether hospital identifiers should be submitted centrally. We will re-assess the situation with a view to making a recommendation when our other working groups have completed their work and after consultation on the contents of this Chapter has taken place.

8.24 As a consequence of the proposals in the preceding paragraphs, we **recommend** that the following data items be held centrally for analysis:

a. sex,
b. health authority of residence,
c. local authority of residence,
d. date of birth,
e. marital status,
f. category of patient,
g. health district in which treated,
h. date of admission,
i. method of admission,
j. source of admission,
k. date the need for elective admission was decided,
l. intended management of the patient,
m. specialty of doctors responsible for care,
n. type of wards used with dates of transfer (as classified in Chapter 9),
o. dates of the end of each consultant episode,
p. method of discharge,
q. destination on discharge,
r. ICD diagnoses for each consultant episode, and
s. operations and operative procedures and dates on which performed.

8.25 The further information that may be required to be held centrally about maternity has not yet been discussed. We **recommend** that discussions with appropriate bodies be arranged and that these deliberations should take into account points arising from the maternity piloting exercise.

Administrative arrangements

8.26 Many of the recommendations and proposals made in the preceding paragraphs will require regular review to ensure that the arrangements are cost-effective and acceptable. Given the confidential nature of patient information, an independent body should be set up to ensure that data protection standards are maintained. We thus **recommend** that a standing committee be set up to agree details concerning the transmission, analysis and output of computerised patient information systems with special regard for ensuring data protection.

8.27 The standing committee would keep under review:

a. The maintenance of data protection standards.
b. Methods and frequency of data submission.
c. The timetable for data submission and the production of data output.
d. Edit checks for the computer tapes.
e. The sample size to be used.
f. The data items to be submitted about each consultant episode.

g. Regular data outputs to be disseminated nationally.

h. Who should have access to the data, what data they should have and any charges or conditions that should be made.

i. Requests for data analysis, their priority and methods of dealing with a high volume of requests.

8.28 Information should flow between health authorities and central government without charge in both directions. The national data will be compiled from those collected, processed and edited into a suitable format by health authorities. We therefore **recommend** that health authorities should not be charged for access to the data held by the OPCS.

Data output

8.29 Output can be produced on computer tape, microfiche and printed tables. We **recommend** that regular tables be produced in a form agreed by the standing committee and that information users, including DHSS, be afforded access to computer tapes on which to carry out their own analyses. The composition and availability of such tapes would have to accord with the conditions laid down by the standing committee. It is anticipated that tapes provided for individual information users would usually contain only a sample of the records and/or a limited number of data items.

Pre-specified tables

8.30 The DHSS has certain information requirements which will not be met, particularly if hospital identifiers are not submitted centrally. On the assumption that the centrally held data will comprise complete coverage with the submission of both complete and incomplete records, we **recommend** that the following tabulations be submitted annually from regions to the Department:

a. Data about private patients treated in NHS facilities. These data will be required on a hospital basis as long as the designation of private beds is by hospital and not district.

b. Data about NHS patients treated under contractual arrangements with the independent or service sectors. These are required for each institution with which the authority has contractual arrangements.

c. Data collected as part of the annual psychiatric census. These will include details about the age, sex, diagnosis, the performance of ECT and length of stay of all patients counted in the census as well as data about the legal status, mental category and time under detention for all patients detained in hospital.

d. As an interim measure, data about bed use produced in the SH 3 format using the current SH 3 rules. This should cease as soon as the new arrangements are working satisfactorily. These data can be derived from the patient information system.

If only a sample of records or only complete records are submitted centrally, the DHSS would require extra pre-specified tables to allow the timely availability of information about bed usage.

8.31 Other data may be required about the use of individual hospitals. Such data might include the type of summary activity data now on the SH 3 return, the use of hospitals by care groups such as the elderly and children or the use of particular units such as those caring for spinal injuries. We **recommend** that the need for, and the content of, all additional pre-specified tabulations be kept under review. The Steering Group will be responsible for deciding which tabulations are submitted to DHSS and will ensure that adequate discussion takes place between DHSS policy and statistics divisions and NHS information providers so that relevant data are provided as efficiently as possible.

DEPARTMENT OF HEALTH AND SOCIAL SECURITY

Steering Group on Health Services Information

ISBN 011 320816 2

The following table should replace Table V which appears on Page 54.

Table V District summary of change in legal status returned annually

ORIGINAL LEGAL STATUS	LEGAL STATUS AFTER THE CHANGE					
	INFORMAL	SECTION				OTHERS SPECIFY
		25	26	29	30(2)	
INFORMAL	▨					
25		▨		▨	▨	
26		▨	▨	▨	▨	
29				▨	▨	
30(2)				▨	▨	
60*		▨	▨	▨	▨	
72* 73*		▨	▨	▨	▨	
135						
136						
OTHERS SPECIFY						

Note: *With or without restriction.

This table should record all changes in legal status of PATIENTS ADMITTED which occur during the year in the ranges of categorie indicated, irrespective of when the patient was admitted or of his legal status on admission.

October 1982
LONDON HER MAJESTY'S STATIONERY OFFICE

Part III Information about facilities

9 Information about beds and wards

Current information systems

9.1 The major source of information about hospital beds is currently the annual SH 3 return, which contains data about the allocation and use of beds in individual hospitals by consultant specialties. Some information is also derived from Hospital Activity Analysis (HAA) and the Mental Health Enquiry (MHE) about hospital length of stay by specialty and diagnosis. Additional information about the availability of beds in psychiatric hospitals is collected on the annual SBH 112 return. Criticisms of the current data sources include:

a. The SH 3 return records patients' use of beds in one hospital only, and does not cover transfers between hospitals.

b. The SH 3 return is inflexible in that only one aggregation of data output, that of specialty, is available.

c. The coding notes to the SH 3 return contain multiple arbitrary instructions which relate little to current medical practice.

d. The aggregation of midnight bed returns to fit the SH 3 output format is an increasingly time consuming task and is becoming less relevant to current clinical practice.

e. The HAA data output in some regions takes so long to produce that it is of little use to operational management.

f. There is considerable overlap and duplication between the SH 3 and HAA systems.

g. There are differences in the definitions and classifications used in the SH 3 and HAA systems.

The ward and changes in medical practice

9.2 Hospital beds are grouped in wards. For statistical purposes a ward should be considered as a unit of nursing management. The problems of defining both a ward and its characteristic feature, a bed, are discussed in Chapter 3.

9.3 Modern methods of patient care have led to major changes in the ways that hospital wards are used:

a. An increasing number of wards are open only for limited periods in the week; some are closed every night, some close all weekend and there are other permutations.

b. Modern ward design has allowed the establishment of wards for mixed sexes; this development increases the flexibility with which wards can be used.

c. The allocation of beds to consultants and their subsequent use have become increasingly flexible.

d. A significant number of wards are staffed and equipped to perform a particular clinical function and this service is used by consultants from many specialties.

9.4 The majority of wards are still staffed for seven days and seven nights a week. However, the introduction of wards open for shorter periods is on the increase as clinical developments have shortened patients' spells in hospital, and financial and staffing restraints have made it increasingly difficult to staff wards at night or at weekends.

9.5 In the past wards, with the exception of facilities for children, have been used for patients of one sex only. The introduction of mixed-sex wards has increased the flexibility of bed use and the efficiency with which they are used but the therapeutic effectiveness and social acceptability of this innovation are not yet proven.

9.6 Historically, individual consultants or groups of consultants in the same specialty have been allocated wards for the specific care of their patients. These allocations have in the past often been too strictly adhered to. Changes in clinical practice and pressures on hospital resources have led to more flexible ways of using beds namely:

a. More than one specialty may share a ward and the beds are used according to demand.

b. Common user wards have been introduced which are used according to demand with no specific bed allocation to individual consultants or specialties.

c. Patients may be admitted to a bed nominally allocated to any of the acute specialties.

9.7 Most districts now have one or more wards which have been allocated for a specific purpose or function rather than for the use of individual consultants or specialties. Examples of these are:

a. Wards allocated to provide for patients with a broadly similar need for types of care, regardless of diagnosis or specialty of consultant; e.g. wards for children, long stay patients or planned admissions.

b. Wards specially staffed and equipped to provide a particular technical type of clinical service which is not necessarily confined to a particular diagnostic grouping; e.g. wards for intensive therapy, isolation, metabolic investigation or the special care of babies.

c. Wards allocated to provide care for particular groups of patients with similar diseases or disabilities; e.g. wards for the younger physically disabled, liver disease, haemophilia, or alcoholism.

9.8 In many situations there may be a difference in function between wards even though they have been allocated to the same group of consultants. For example:

a. Wards allocated to consultants in geriatric medicine or the psychiatric specialties may be used for different purposes requiring different levels of resource provision.

b. Wards allocated to general physicians may be used for general purposes or one may be devoted to a consultant's specialist interest such as gastroenterology.

Information about beds

9.9 Traditionally more information has been collected about beds than about any other NHS facility. A variety of measures have been used and different definitions applied without any consistency nationally. In reviewing the information needs about beds we have adopted the following terms:

a. *Bed complement*. The number of beds, agreed between a district and region, that could be available on an agreed day if all beds were staffed and equipped. Some regions find this statistic of use for planning purposes.

b. *Operational planning intent*. The number of beds that a district intends will be available for use during a future period of time.

c. *Bed availability*. The number of beds that were actually available for use by patients, recorded retrospectively on daily ward listings.

d. *Bed use*. The number of beds that were used by patients, recorded retrospectively on daily ward listings and computerised as part of the patient information system.

e. *Bed demand*. Measures of the demand for hospital beds are discussed in Chapter 11.

The ward inventory and operational planning intent

9.10 Wards differ in the flexibility with which they can be used. In order to know about the suitability of individual wards for the care of different patient groups, we **recommend** that each district prepare and maintain a ward inventory describing the characteristics of each ward in the district. The inventory should contain as a minimum the following data items recorded in a structured form:

a. Name of the site on which the ward is situated.

b. Name/number of ward.

c. Number of beds in the ward it is intended will be available for use.

d. Time availability of the ward.

e. Broad patient group for which the ward is intended.

f. Intended age and sex mix for the ward.

g. Intensity of intended clinical care to be carried out in the ward.

h. Consultants or specialties most commonly using the ward, and the number of beds allocated to each specialty if there are agreed fixed specialty bed allocations.

i. The DMT's operational planning intent of the number of beds it is anticipated that each specialty will use within the district.

A specimen ward inventory for a district is shown in Table VI.

Table VI A specimen ward inventory

SITE – Newtown Royal Infirmary (D.G.H.)

WARD NUMBER	TIME (D/N) AVAILABILITY	NUMBER OF BEDS	PATIENT GROUP	AGE/SEX GROUP	INTENSITY OF CARE	SPECIALTIES COMMONLY USING WARD
1	7/7	30	General	M	Normal	Orthopaedics
2	5/4	30	General	M/F	Normal	ENT, Ophthalmology
3	7/7	10	General	M/F	Intensive	All acute specialties
4	7/7	30	General	F	Normal	Gen med, dermatology
5	5/0	20	General	M/F	Normal	All surgical specialties
6	7/7	30	General	Children	Normal	Paediatrics, all surgical
7	7/7	10	YPD	M/F	Normal	Rheumatology, neurology
8	7/7	30	General	Elderly M/F	Normal	Geriatrics
9	7/7	30	Maternity	F	Consultant	Obstetrics
10	7/7	30	Neonates	Neonates	Special	Paediatrics
11	7/7	30	M.I.	M/F	Short	Mental illness

SITE – Smalltown Long Stay (single specialty)

WARD NUMBER	TIME AVAILABILITY	NUMBER OF BEDS	PATIENT GROUP	AGE/SEX GROUP	INTENSITY OF CARE	SPECIALTIES COMMONLY USING WARD
1	7/7	30	General	Elderly M	Limited	Geriatrics
2	7/7	30	General	Elderly F	Limited	Geriatrics

9.11 It is anticipated that each ward would usually be assigned to one category in the classification for each data item. However, if appropriate, districts may wish to identify separately distinct groups of beds in a ward with mixed functions. For mental illness/handicap and children's wards additional information might be collected to assess whether such wards meet any recommended minimum standards.

9.12 We **recommend** that time availability be expressed by recording separately the number of day and night periods in a week for which it is planned the ward will be available. A ward open for five days and four nights would thus be designated D5/N4.

9.13 Even allowing for considerable flexibility in the use of beds, it is policy to reserve some wards for the exclusive use of certain broad groups of patients. We **recommend** that the intended use of wards by patient groups be classified as follows:

a. for patients with mental illness,
b. for patients who are mentally handicapped,
c. for maternity patients,
d. for neonates,
e. for the younger physically disabled, or
f. for general patients (all wards other than those noted at a–e).

9.14 To justify inclusion in the classification in the preceding paragraph it must be common for a whole ward to be reserved exclusively for a group of patients. In the pilot studies the feasibility of adding further patient groups to the classification was considered. For small groups, such as patients being treated for alcoholism, wards solely for this purpose did not occur frequently enough to justify inclusion. The further detailed breakdown of the large group of wards for general patients could only be done on the basis of the consultants using the ward. The problems associated with using this way of designating beds is discussed in paragraphs 9.20–9.29.

9.15 In most districts it is policy to reserve some wards for patients in particular sex and age groupings. Facilities are frequently intended for the exclusive use of children or the elderly, or are segregated by sex. We thus **recommend** that wards be classified by the following groups which indicate the intended age and sex mix:

a. only for neonates,
b. only for children and/or adolescents,
c. only for the elderly who are male,
d. only for the elderly who are female,
e. only for the elderly of either sex,
f. only for males,
g. only for females, or
h. for all ages of either sex.

9.16 Wards reserved for use by the broad patient groups recommended in paragraph 9.13 will differ in the level of resources and in the intensity of care it is intended to provide in them. These differences will to a large extent determine the types of patient that can be looked after in each ward. We thus **recommend** that wards for each patient group be further classified as follows:

a. *for patients with mental illness or who are mentally handicapped:*
   i. for intensive care: a regional or interim secure unit,
   ii. for short stay: in that patients are intended to stay less than a year, or
   iii. for long stay: in that patients are intended to stay more than a year.

b. *for maternity patients:*
   i. only for patients looked after by consultants,
   ii. only for patients looked after by general practitioners, or
   iii. for joint use by consultants and general practitioners.

c. *for neonates:*
   i. for intensive care,
   ii. for special care, or
   iii. for normal care: in the maternity ward nursery or as part of the maternity ward.

   Definitions of a neonatal intensive care unit and a special care baby unit have not yet been agreed.

d. *for general patients:*
   i. for intensive therapy,
   ii. for normal therapy in that resources permit the admission of patients who might need all but intensive therapy, or
   iii. for limited therapy in that nursing care rather than continuous medical care is provided. Such wards can be used only for patients carefully selected and restricted to a narrow range in terms of the extent and nature of disease. Examples of such wards would be those currently designated as 'convalescent' or 'pre-convalescent', and wards in hospitals without on site medical cover.

9.17 The variety of patients that can be looked after in a ward is also dependent on the facilities on the site to which patients in the ward have access. To a large extent the concept of site equates with what used to be known as a 'hospital'. In recent years, however, the term 'hospital' has also been used to describe a unit of management which may include facilities on a number of sites. A site comprises facilities and buildings managed by the same district which lie on a single or conjoined piece of land. Adjacent facilities separated only by a natural or man made feature such as a stream or a road should still be considered as forming a single site provided that there is the capability of the safe and quick transport of patients between the facilities. We **recommend** that sites should be classified as follows:

a. district general hospital,
b. part of a district general hospital,
c. single specialty site,
d. site with a limited number of associated specialties,
e. site with a limited number of unassociated specialties, or
f. other site.

9.18 The classification of types of site arose out of the pilot trials. It is now being tested for its general applicability in five regions, as are all the recommendations in paragraphs 9.12 to 9.16. When this has been completed, precise definitions will be given for each of the categories in the classification and guidance will be issued to cover possible idiosyncratic situations. A summary of the type of wards and the supporting facilities available on a site should allow a more relevant classification of hospitals to be developed.

9.19 In our interim report it was recommended that wards be classified by the ease of patient access to specified investigative facilities. This did not prove to be effective in the pilot trials as special arrangements can often be made by bringing the facility to the patient and thus not involving his physical movement. However, the presence of an operating theatre proved to be a useful distinguishing feature and the recording of this facility is discussed in Chapter 12. The five data items noted in previous paragraphs and their classifications may appear complex but they have the merit of permitting the flexible aggregation of data about ward availability and use. Further work is required to develop codes for individual wards and to ensure that all eventualities are covered.

The availability and use of beds

9.20 Bed availability statistics have traditionally been collected by the SH 3 mechanism which aggregates data by specialty and hospital. This system was introduced into the NHS in 1949 at a time when:

a. nearly all hospital beds were allocated to a clinical specialty and not for a specific function,

b. the great majority of wards were allocated for the exclusive use of one speciality, and often for use by one consultant,

c. all wards were available both day and night throughout the week,

d. all patients were intended to spend at least one night in hospital, and

e. few patients changed either their consultant or their ward during a stay in hospital.

9.21 Given the pattern of clinical practice at that time, it was decided that an accurate and relevant way of recording bed availability and usage was by a midnight count of the number of beds available in each ward and the number of beds that were occupied. Each ward belonged to a specialty and the ward figures could be aggregated to give the bed availability and usage of each specialty. Patients were only counted when discharged and it was recognised from the outset that this mechanism might not reflect accurately the work of specialties.

9.22 As noted in paragraphs 9.3 to 9.8, there have been major changes in clinical practice and in the ways that hospital beds are used. New practices have become more prevalent and the SH 3 mechanism for measuring bed availability and usage has been altered, the current guidance being:

a. Wards not designated by a specialty have been added to the SH 3 classification. This means that work done by some consultants is not attributed to them. For example, consultant general surgeons using an intensive care unit or a pre-convalescent unit will not be credited in the statistics for their specialty with the work done in these units.

b. No central guidance has been given to record the attribution of the availability of empty beds in a mixed specialty ward. The current SH 3 coding notes recommend that special local arrangements should be made for deciding the specialty to which unoccupied beds are supposed to be available.

c. Bed borrowing should be allowed for by adjusting both the bed availability and bed usage figures by adding or subtracting the number of borrowed beds. However the SH 3 coding notes recognise that when there is extensive bed borrowing this may not be feasible and again recommend that local arrangements should be made to resolve the problem. There is no uniformity between districts in the way these calculations are made.

d. Day case admissions may be treated either in a common user day unit or on a general ward. The former is identified on the SH 3 return and the number of cases can be recorded, but the amount of work done by the different specialties and their individual bed use is not identified. If the day case work is done on general wards, the number of cases is recorded but these are not included in statistics derived from bed availability and use data. Thus day cases do not contribute towards bed occupancy if the latter is calculated at midnight nor to the average length of stay of a specialty.

e. No attempt has been made in the SH 3 mechanism to identify the number of transfers between consultants and/or wards. The SH 3 is a hospital based return; any patient transferred between hospitals during the course of a continuous stay in hospital counts as two 'discharges'. If the transfer is between wards in the same hospital only one 'discharge' is counted. This convention can lead to major problems in making comparisons between districts.

f. A patient 'discharged' from hospital can only be attributed to one specialty or department, that from which he was 'discharged'. Thus a patient admitted to a surgical unit with a spell in ITU and transferred to a geriatric ward before being 'discharged' is counted as a 'discharge' from the geriatric unit as long as all the wards are in the same hospital. However, the bed days used are distributed between the specialties and units on the basis of actual use. This convention artificially increases the mean duration of stay of all specialties or units except the last.

9.23 The usefulness of the SH 3 mechanism for measuring bed availability and usage depends on the frequency with which the various changes in clinical practice identified previously actually occur. The statistics required to provide this information are not collected nationally but 16 districts provided data as part of a special study which showed that:

a. The proportion of a district bed stock which is in flexibly used mixed specialty or common user wards varied from 5% to 80%. Nine of the 16 districts providing data had 25–35% of their bed stock in flexibly used wards. Maternity and psychiatric wards were excluded from the survey.

b. Bed borrowing between specialties occurred in 5–7% of beds each day, and between consultants in 8–10% of beds. Maternity and psychiatric wards were excluded from these figures.

c. There was no transfer between consultants or wards for 85–90% of discharges. Of the remainder, 8–10% transferred between wards but kept the same consultant, 2–5% transferred between wards and changed specialty, and less than 1% transferred between specialties but stayed in the same ward.

9.24 In view of its inappropriateness to modern clinical practice, we **recommend** the cessation of the SH 3 mechanism for the collection of data about bed availability and use.

9.25 To replace the SH 3 mechanism, we **recommend** that bed use data be collected through the patient information system described in detail in Chapters 4 and 5. The following principles are commended:

a. All patients using hospital beds should be classified as ordinary admissions, day case admissions, regular day/night admissions or interval admissions.

b. The ward occupied by the patient and the consultant responsible for care should be identified separately.

c. All the wards used and all the consultants responsible for care during a stay in hospital should be recorded.

d. It should be possible to link hospital stays in the same district so that the continuous length of stay in the district can be calculated.

9.26 The use of beds in a district can thus be analysed by:

a. consultant episodes,

b. ward stays,

c. any aggregation of ward stays (e.g. hospital or site), and

d. district spells.

9.27 The number of beds available in a ward can be recorded accurately and we **recommend** that bed availability be recorded retrospectively on the daily ward listing for each ward. This will allow data to be aggregated to provide information about:

a. all the wards on the same site, and

b. all the wards serving the same patient group and/or providing the same intensity of care.

9.28 Specialty bed allocation policies differ markedly between districts, ranging from the strict allocation to individual specialties to flexible use within broad groupings. The degree of flexibility within a district may be explicit policy as expressed by an operational planning intent or determined by local agreement at consultant and ward level. Without detailed knowledge of local circumstances specialty bed availability statistics have become very difficult to interpret. When beds are used flexibly, the attribution of an empty bed to a specialty becomes a matter of subjective judgement by the medical records department. This problem has been overcome administratively by arbitrary apportionment procedures which lack credibility. In view of the prevalence of flexible allocations and bed borrowing, we **recommend** that the often complex and time consuming process of daily attributing each available bed to a specialty should no longer be a compulsory part of the statistical system.

9.29 It has been traditional to record bed availability in terms of the average number of beds available daily. This method of describing availability leads to difficulties with wards which are only open for a limited time in the week or wards that close for certain periods of time during the year. Bed usage data obtained from the patient information system will be expressed in bed-days used. We **recommend**, therefore, that bed availability data be aggregated and returned in terms of bed days for all wards which are open overnight. The bed availability of wards open only during the day should be separately identified. If a ward is open for five days and four nights, the bed availability should be calculated on the basis of the five days for which it is open.

The daily ward listing

9.30 Ward activity is currently counted by a ward return completed as if at midnight, which is a census of the activity occurring at that moment. This system records adequately the numbers of ordinary admissions in beds at the time and those who have left the ward. It may not take account of any other use to which the ward has been put during the period.

9.31 Because of the increasing variability of patterns of care, we **recommend** that in future a daily ward listing should record all the activity that has occurred in the ward in the previous 24 hours and the bed availability status of the ward. Although information may be collected during the day, the listings should be completed as if at midnight in all wards open overnight and at the end of the working day for other wards.

9.32 A significant component of the work of some wards is made up of patients who attend for treatment but do not use a hospital bed. Although such patients are not filling beds, they can occupy an appreciable amount of nursing time. We **recommend** that patients who attend a ward for care and who do not require the use of a hospital bed are called ward attenders. They should not be included in the patient information system but the number of attendances should be recorded on the daily ward listing.

9.33 We **recommend** that the ward listing should provide the following minimum set of data about the patients using a ward:

a. Ordinary and interval admissions; those in the ward at midnight, those who have entered or left the ward and those who have changed the consultant in charge since the last return was completed.

b. Day case admissions who have used the ward and the number of regular day admissions and regular night admissions.

c. Ward attenders; the number of patients who have attended the ward.

In the patient information system the most important data are those concerning changes in ward stay or consultant episode; the actual number of patients who have used the ward in the previous 24 hours is of lesser importance.

9.34 We **recommend** that the daily ward listing should record the bed availability status at midnight or the number available during the working day in the case of wards open for limited periods. Beds will either be:

a. available and occupied,

b. available and unoccupied,

c. unavailable because they are reserved for patients on planned leave with a fixed day to be re-admitted, or

d. unavailable for other reasons (e.g. inadequate staffing, partial ward closure).

Statistics for district management

9.35 We have recommended that the following data should be available within a district about wards and the ways they have been used:

a. An up-to-date ward inventory describing the characteristics of each ward and the number of beds that are intended to be used. This will include the DMT's planning intention for the use of the district bed stock by specialty.

b. A retrospective summary of bed availability.

c. A retrospective summary of ward use derived from the patient information system, with additional data about regular day and night admissions and the number of ward attenders obtained from daily ward listings.

Different levels of data aggregation can be derived from these three sources and are summarised in Table VII.

9.36 Some districts will process their own patient data, while others will have to rely on regional services. We **recommend** that, at whatever level data processing is carried out, data about bed usage must be available to a district not later than six weeks after the end of the period of data collection to which it relates.

9.37 The information about intended bed use, availability and actual use that district managers require will differ from district to district depending on the management style adopted and the problems being faced. However, it is likely that among the analyses commonly required will be:

a. an analysis, by specialty, of bed use compared with what was intended,

b. an analysis, by individual ward, of bed use compared with what was intended and/or what was available, and

c. an analysis, by appropriate groupings of wards, of bed use compared with what was intended and/or what was available.

Table VII Levels of aggregation for which information about beds will be available in a district and at DHSS

TYPES OF INFORMATION	LEVELS OF DATA AGGREGATION AVAILABLE			
	WARD	GROUP OF WARDS	SITE	SPECIALTY
a. *At district level*				
Bed complement	+	+	+	+
Planning intention	+	+	+	+
Availability	+	+	+	
Use	+	+	+	+
Unmet demand				+
b. *At DHSS*				
Planning intention				+
Availability		+	+	
Use		+	*?	+
Unmet demand				+

* The availability of these data is dependent on the outcome of the unresolved issues discussed in Chapter 8.

9.38 From basic data such as the number of bed days intended to be used, actually available and used, and the number of patients treated, statistics can be derived which serve as indicators of the effective use of beds. However, the cessation of data collection about specialty bed availability means that traditional statistics which incorporate this measure such as specialty bed occupancy, specialty turnover interval and specialty throughput per available bed can no longer be calculated in the same way.

9.39 Bed occupancy figures derived from the current midnight bed returns are poor indicators of bed usage when calculated according to the SH 3 rules. We have recommended that bed use data will include all the patients using a ward in a 24 hour period and these data cannot be compared with bed availability which is measured at a fixed point in the day. We therefore **recommend** that bed occupancy statistics for any aggregation of beds cease to be used as an indicator of efficient bed use.

9.40 Turnover interval can continue to be calculated in the traditional way for a ward or any group of wards such as a hospital. The flexible use of beds and the prevalence of bed borrowing, however, make specialty turnover interval an increasingly less useful index of effective bed use.

9.41 The two most useful indices, derived from activity data, of the use of beds by a specialty are length of stay and throughput per available bed. The new data set will allow a realistic specialty length of stay to be calculated for the first time and day case admissions can be included in the calculation. Throughput can be calculated in terms of the number of beds that the specialty was intended to use rather than the beds estimated to be available.

9.42 When we have completed our review of health service manpower and finance statistics, work will be started to identify useful ways of linking activity data about beds with manpower, finance and demographic statistics.

Statistics for region and DHSS

9.43 We **recommend** that each district regularly send to region:

a. A copy of the annual district statement of planning intention for ward use including the intended bed use by specialty.

b. A retrospective summary of bed availability by ward type and site. A specimen is shown in Tables VIII (a) and (b) and could form the basis for a future hospital classification.

c. A minimum data set for each patient using a hospital bed and data about the number of regular day and night admissions.

Table VIII (*a*) District summary of bed availability

	SITES				
Name Classification *Specialties					
SUPPORTING FACILITIES	PRESENT OR ABSENT				
Operating theatre Radiology department Pathology department A and E department					
WARDS OPEN AT NIGHT	NUMBER OF BED DAYS WHICH WERE AVAILABLE				
a. General patients, all ages: Intensive Normal Limited					
b. General patients, elderly: Normal Limited					
c. General patients, children: Normal Limited					
d. Younger physically disabled					
e. Neonates: Intensive Special Normal					
f. Maternity: GP Consultant Mixed					

* Specify specialties for single specialty sites or sites with a limited number of specialties.

Table VIII (*b*) District summary of bed availability (*cont.*)

	SITES				
WARDS OPEN AT NIGHT	NUMBER OF BED DAYS WHICH WERE AVAILABLE				
g. Mental illness, all ages:					
Intensive					
Short					
Long					
h. Mental illness, elderly:					
Short					
Long					
i. Mental illness, children:					
Short					
Long					
j. Mental handicap, all ages:					
Short					
Long					
k. Mental handicap, children:					
Short					
Long					
WARDS OPEN DURING DAY ONLY	NUMBER OF BED DAYS WHICH WERE AVAILABLE				
Specify: — — —					

9.44 We **recommend** that regions send to DHSS a summary of the district data. For each district the following should be submitted:

a. An annual statement of planning intention for bed use by specialty.

b. An annual retrospective summary of bed availability by ward type and site.

c. The minimum data set recommended in Chapter 8 for each patient using a hospital bed and data about the number of regular day and night admissions.

10 Information about consultant out-patient clinics

Introduction

10.1 Information about consultant out-patient clinics is currently returned to the DHSS on form SH 3. The specialty breakdown of the clinic sessions held in each hospital and the number of new and total attendances in them is recorded and returned annually. Criticisms made of the current statistics include:

a. the imprecise nature of the session as a unit of resource,

b. the insufficient breakdown of categories of out-patient,

c. the difficulty of allocating clinics organised on a functional basis to a specialty (e.g. pain clinic, growth clinic), and

d. the paucity of information about patients seen in clinics.

The out-patient clinic

10.2 The definition of an out-patient clinic and the problems in distinguishing work of this kind from other clinical work are discussed in Chapter 3. The distinguishing feature of a consultant out-patient clinic is that it is an administrative arrangement taking place anywhere in the district on a regular basis which permits a consultant and his staff to see patients.

10.3 Each out-patient clinic is held on a number of occasions or sessions during a period of time. Each session lasts for a 'notional' half day; the actual length of time of the session may vary from one to five hours. Apart from the varying length of time for which clinic sessions run, they may differ in the following respects:

a. The number and experience of the doctors working in the clinic. The number and type of patients that can be seen will differ significantly, for example, between a consultant, senior house officer and clinical assistant.

b. The structural layout of the premises in which the clinic is being held. Some clinics are held in purpose-built suites with two or more examination rooms, others are held in rooms with two doctors sitting side by side each seeing a patient.

10.4 There have been local experiments to develop a more precise unit of resource management than clinic session; for example, by relating the time for which the clinic is scheduled to the number of doctors usually present at the clinic. A clinic session can be measured in terms of room-hours; one room-hour being the allocation of one hour's time in one out-patient consulting room used by one doctor. Thus a clinic session, scheduled to last three hours with three doctors working in it, has an allocation of nine room-hours of clinic resource. Such a refinement would permit greater precision in the recording of out-patient statistics and would thus provide more valuable information for those planning and reviewing the use of resources. This work is not yet at a stage to be generally commended but we **recommend** that further development work in this area should be encouraged with a view to including a better unit of resource in the minimum data set at a later stage.

10.5 The planning and review of activity in an out-patient clinic requires information not only about the work done but also the work that was intended to be done but was not. So information is required about the clinic sessions cancelled and about the number of patients with appointments who did not attend.

Administrative classification of out-patient attendances

10.6 Attendances at an out-patient clinic occur either at the instigation of the consultant running the clinic or his staff, or by referral from other sources such as general practitioners, other consultants or medical staff in an accident and emergency department. The consultant in charge of the clinic has little control over the referrals.

10.7 It is of use to identify patients attending the clinic for the first time and whose attendance has been initiated by someone other than the consultant in charge of the clinic or his staff; these patients usually need more time allotted to their appointments. The identification of this type of out-patient allows local managers to determine the waiting time for such an appointment from the date of referral to the appointment with the consultant (see paragraph 11.14). These data will also help in providing information about the expected workload for diagnostic departments.

10.8 Patients attending the clinic for the first time and whose attendance has been initiated by someone other than the consultant in charge or his staff are currently designated as 'new' patients. All other attendances are known as 'old' patients. These terms are misleading: some patients currently classified as 'old' are actually attending the clinic for the first time and, although they may have been seen by the consultant before, they are 'new' to the clinic. This situation commonly occurs with patients whose first contact with a particular clinical service is as an emergency admission. For example, a consultant arranges an out-patient appointment for a patient who had previously been admitted, which constitutes the patient's first contact with the out-patient clinic. These patients normally do not need the length of appointment required by patients new to the clinical service, nor is it relevant to collect information about their waiting time for an appointment.

10.9 Some patients may attend the out-patient clinic for the first time, having been seen by a consultant on a domiciliary visit, or having been transferred from an out-patient clinic run by the consultant elsewhere. The latter patients may have been seen previously at a clinic in the district or one outside. If a patient is transferred between clinics held within the district, the first attendance at the clinic to which he is transferred should be considered for statistical purposes as a re-attendance.

10.10 The majority of patients at any clinic are making a return visit arranged at the previous appointment. Patients re-attend for many reasons and there is currently much discussion about the balance there should be between consultant follow-up of patients with chronic disease and the role of the general practitioner.

10.11 It is desirable for district managers to have information about two aspects of out-patient clinic workload, namely:

a. The balance between the workload which is generated by the consultant in charge and his staff and that which is initiated by others. This information can be derived from the data collected currently and classified as 'old' and 'new' patients.

b. The balance between first attendances at the clinic and those which are re-attendances. These data give valuable information about the population attending the clinic. It is impossible to obtain this information from the current routine statistics.

10.12 To enable both types of information to be obtained, we recommended in our interim report that patients attending out-patient clinics should be classified as follows:

a. First attenders: referrals. Patients making the first attendance of a continuous series at an out-patient clinic for the same ailment (or a single attendance if only one is needed) when this attendance has not been initiated by the consultant or his staff. In practice new referrals will normally have a letter of referral and will require additional time for the appointment.

b. First attenders: consultant initiated. Patients making their first attendance of a continuous series at a consultant's clinic for the same ailment (or a single attendance if only one is needed) who have previously been seen by that consultant or his staff as a hospital admission inside or outside the district, in an out-patient clinic outside the district, or on a domiciliary visit.

c. Re-attendances. Patients making a second or subsequent visit to the consultant in clinics held in the district.

10.13 In the pilot trials more trouble was experienced with this classification than any other recommendation. The data were difficult and time-consuming to capture and the pilot districts concluded that the extra effort did not justify the additional information that would be available from the classification as defined in paragraph 10.12. This experience was substantiated by the many comments made during written consultation and the consultative seminars.

10.14 We still consider, however, that information about the balance between first attendances at the clinic and re-attendances is needed by district management. We therefore **recommend** that:

a. Further work should be commissioned to develop definitions and methods of data capture which will allow this information to be obtained.

b. In the interim, attenders at out-patient clinics be classified as referrals and consultant initiated, the referrals being defined as in section a. of paragraph 10.12. The terms 'new' and 'old' should not be used because they are misleading.

c. Once further work has been completed and piloted, consideration should be given to introducing a three point classification for out-patient attendances into the minimum data set.

Information about patients

10.15 There are over 34 million out-patient attendances each year of which nearly 8 million are classified as 'new' out-patients. These attendances represent a considerable use of NHS resources, not from the cost of each attendance, but from the sheer volume of such activity. We realise the desirability of advocating some improvement in the relatively small amount of information now available about patients attending out-patient clinics but consider it difficult to reconcile such an objective with the realities of present economic constraints.

10.16 A pilot project was carried out in Chesterfield to develop an out-patient data base along the lines of HAA and this highlighted the difficulty of obtaining diagnostic data about out-patients. However, a number of districts have carried out ad hoc surveys and these have been successful in identifying the personal details of patients and the methods and sources of referral. Such surveys should be encouraged but we note that they may not form an adequate basis for the proper understanding of such large scale activity as out-patient work.

10.17 In a few districts out-patient computer systems are being installed to improve the scheduling of clinics. Aggregated statistics can be obtained as a by-product of the primary administrative function. We **recommend** that such systems should be further developed and introduced widely throughout the service. A minimum data set for computer based out-patient information systems is discussed in paragraph 10.25.

10.18 In recent years there has been a trend to carry out more technical and operative procedures in out-patient clinics. The care of some patients attending out-patient clinics requires as high a level of resources as that for many patients admitted as day cases. These patients may be attending the clinic for the first time or as a follow-up to a previous visit. We **recommend** that further work should be done to attempt to obtain detailed information about patients attending out-patient clinics who are heavy users of resources in that:

a. they occupy a considerable amount of time in the clinic,

b. a procedure is done in the clinic needing special equipment or staff, or

c. investigations or treatment are ordered during the visit which lead to heavy demands on supporting services such as the diagnostic departments or para-medical services.

10.19 The Scottish Home and Health Department is sponsoring a study to assess the feasibility of obtaining data about patients attending a sample of out-patient clinics. Having obtained basic data such as patient age, sex and area of residence which are useful for initial analysis, the data are used as a sampling frame to obtain further information including diagnosis and the use of specified resources. We **recommend** that this approach be further developed in a small number of English health districts if the initial Scottish study proves successful.

Statistics for district management

10.20 Each district team needs to know how consultant out-patient clinic sessions have been allocated and used. Statistics should be collected on a regular basis and we **recommend** that the following minimum data set should be available for each clinic:

a. Name of clinic with details of its function and specialty of the consultant (or consultants) in charge. The choice of functional titles is for local decision. Standard specialty titles as shown in Table II should be used. If consultants from two specialties run a clinic jointly, both specialties should be used to identify the clinic. However, obstetric clinics should be identified separately from gynaecology clinics and the former should be further classified as ante-natal clinics and post-natal clinics. Those clinics held under contractual arrangements should be identified.

b. Number of clinic sessions intended to take place in each period.

c. Number of clinic sessions which took place in each period.

d. Number of clinic sessions which were cancelled in each period.

e. Number of patients seen in the clinic categorised as:

   i. referrals, and

   ii. consultant initiated.

In some clinics a family or a couple may be treated together. The number of patients recorded should be the number for whom a separate appointment has been made.

f. Number of attendances by private patients.

g. Number of patients with an appointment who did not attend, sub-divided by the two categories in e.

10.21 In Chapter 11 recommendations are made about the information required about demand for out-patient clinic appointments. For each out-patient clinic the following information should be available:

a. Number of written requests made by general practitioners for appointments with the consultant in a specified period.

b. Number of written requests made by general practitioners when the patient had not been given an appointment occurring before the end of the specified period.

10.22 Additional information that districts might find of use to collect by regular or ad hoc survey includes:

a. Under and over-running of clinics. Using a locally determined figure, the number of clinics which over and under run by the agreed time can be recorded.

b. Discharges from the clinic. To identify whether an out-patient 'pool' of patients is expanding or contracting, it may be of use to compare the number of patients entering the 'pool' (all first attenders) with those leaving it. Although some hospitals regularly record the number of patients discharged from out-patient clinics, a significant number of patients do not attend or are otherwise lost to the system.

c. Punctuality of appointment systems. Occasional surveys may be done to determine the time patients spend in the clinic waiting to be seen. This is of particular use in scheduling clinic appointments to the mutual benefit of patients and doctors.

d. Access to the clinic. Information about the patients' method of transport, in particular health service supplied transport, can assist the planning of out-patient services.

e. Re-attendance initiation. The number of patients recalled by consultants as opposed to hospital doctors in training can be recorded.

10.23 We have noted that the following occur among the types of clinic held on hospital premises and not in the charge of a consultant:

a. Ante-natal and post-natal clinics including clinics for relaxation and parent-craft, and family planning clinics run by general practitioners and midwives. Such clinics also commonly take place off hospital premises and the information requirements about them will be considered by the working group set up by the Steering Group to review community health statistics.

b. In many psychiatric hospitals, clinics staffed by nurses are held for the maintenance treatment and monitoring of drugs such as lithium and depot neuroleptics. Information about the workload should be available at district level.

10.24 Some consultant out-patient clinics form part of the provision of care for a particular group of patients. In most cases the greater part of the provision is made outside hospital and the community health working group has the responsibility for identifying the information requirements. Any additional information required about contacts made in such clinics will be recommended in subsequent reports.

Computerised out-patient clinic information systems

10.25 A number of districts are implementing patient administration systems with an out-patient module which can be linked to other modules containing information about patients using a hospital bed and patients waiting for elective admission through a computerised master patient index. We **recommend** that the following data items should be collected in a computerised out-patient information system:

a. district patient number,

b. sex,

c. geographical code of current home address,

d. date of birth,

e. marital status,

f. code of appropriate general practitioner,

g. category of patient,

h. dates of all appointments made,

i. record of whether appointment took place with reason for non-occurrence,

j. source of initial attendance,

k. code of consultant in charge of clinic,

l. code for location of the clinic, and

m. date discharged from the clinic.

10.26 We **recommend** that the source of initial attendance be classified as follows:

a. Referral from a general practitioner.

b. Following an emergency admission under the care of the consultant in charge of the clinic.

c. Referral from an accident and emergency department in the district.

d. Following a domiciliary visit by the consultant in charge of the clinic.

e. Referral from another consultant in the district.

f. Self referral.

g. Other source of referral.

Information for DHSS and regions

10.27 The regions and the DHSS will require information for planning and review purposes. Therefore, we **recommend** that each district regularly send a return to region based on the data set recommended in paragraphs 10.20 and 10.21. Regions will then produce an annual summary of the district information using the specialty titles described in Chapter 5. For out-patient purposes, obstetrics and gynaecology should be recorded separately and obstetric clinics should be divided into ante-natal and post-natal clinics. A specimen district summary is shown in Table IX (a) and (b).

10.28 The regions and DHSS will be able to obtain more detailed information about out-patient clinic work from districts with a patient administration system. We **recommend** that data output from these districts containing the data items noted in paragraph 10.25 be available to the regions and to the DHSS.

Table IXa District summary of out-patient clinic activity returned annually including private patients and patients seen under contractual arrangements

SPECIALTY	CLINIC SESSIONS		REFERRALS		CONSULTANT INITIATED		GP REFERRAL REQUESTS	
	HELD	CANCELLED	SEEN	*DNA	SEEN	*DNA	TOTAL REQUESTS	**REQUESTS BUT NO APPOINTMENT

NOTE:

* DNA = Patients with a booked appointment who did not attend.

** Requests but no appointment = Patients for whom a request to be seen had been made but who do not have an appointment booked before the end of the year.

Table IX(b) District summary of out-patient clinic activity returned annually: details of private patients and patients seen under contractual arrangements

SPECIALTY	TOTAL ATTENDANCES BY PRIVATE PATIENTS	CLINICS HELD UNDER CONTRACTUAL ARRANGEMENTS	
		SESSIONS HELD	TOTAL ATTENDANCES

11 Information about demand for hospital facilities

Introduction

11.1 Information is currently collected about the number of patients waiting for hospital in-patient treatment as part of return SH 3 and on return SBH 203. Information about the waiting experience of patients who have been admitted is available from Hospital Activity Analysis and summarised in the Hospital In-Patient Enquiry. Criticisms of the current statistics about demand include:

a. The multiplicity of returns concerned with the demand for hospital beds.

b. A lack of national information about expressed demand for out-patient clinics.

c. An inability to determine the total waiting experience of a patient; namely the time spent waiting for an out-patient appointment combined with the time spent waiting for a subsequent hospital admission.

e. The imprecise and incomplete nature of some of the data items currently collected.

f. Data about the number of patients waiting do not, in isolation, adequately reflect the expressed demand for a service.

Information about demand

11.2 To plan and run clinical services, information is required not only about the allocation and use of hospital facilities but also about the demand being placed upon them. It is important to try and estimate the need for hospital treatment but this requires sophisticated epidemiological techniques and cannot be measured by routine statistics. An expressed demand is a referral for hospital treatment or to a hospital facility; a met demand is a referral that has been dealt with.

11.3 We **recommend** that, as a minimum, routine information be available about:

a. the demand for out-patient clinic appointments, and

b. the demand for elective admission to hospital.

11.4 Individual districts or hospitals may wish to collect additional information about:

a. The expressed demand for emergency admission to hospital (i.e. the total requests for emergency admission) where it is not possible to admit all requests. Information about the met demand (total number of emergency patients admitted) is available from the patient information system.

b. The expressed demand for day care facilities.

c. The expressed demand for the transfer of patients between specialties or from hospital care to that of local authorities.

d. The expressed demand for particular procedures or investigations.

11.5 Information about demand involves the collection of data about:

a. The *number* of people referred for care, waiting for care and who have received care.

b. The *waiting time* of people waiting for care and of those who have received care.

11.6 Waiting time can be measured for three different groups of patients:

a. A group whose demand has been met.

b. A group which is still waiting for its demands to be met; a census taken on a particular day will allow the waiting time to date to be measured.

c. A group which has been referred to the service in the same time period and which is followed up at regular intervals until all patients have been admitted. A cohort study of this type provides information both about patients who have finished waiting and those still waiting.

11.7 Waiting times are sometimes expressed as averages, the mean or median being most used. The distribution of waiting time is however skewed and more valuable information is obtained if waiting time is expressed in terms of a frequency distribution.

DEMAND EXPRESSED IN NUMBERS OF PEOPLE

Out-patients

11.8 The majority of patients attending out-patient clinics for the first time are classified as referrals (see paragraph 10.14). The expressed demand for out-patient clinic appointments can be measured by calculating the total number of requests for referral to the clinic in a given period of time.

11.9 At the end of the period of time, the people for whom a referral request has been made during that period will either:

a. have been given an appointment falling within the period and been seen in the clinic,

b. have been given an appointment falling within the period but did not attend for the appointment, or

c. still be waiting to be seen; this group includes both patients without an appointment date and those who have been given an appointment occurring after the end of the period.

To identify whether the number of patients waiting for an out-patient appointment is increasing or decreasing, information is required about the balance between referrals and the number seen.

Patients for whom a decision to admit has been made

11.10 Non-maternity elective hospital admissions are classified as waiting list, booked, and planned admissions (see paragraph 5.13). For all three types of admission the date can be identified on which a clinical decision has been made that admission was required. For the latter two types an actual date of admission is decided upon at the same time. The expressed demand for elective hospital admission can thus be measured by the number of patients for whom a decision to admit has been made during a given period of time.

11.11 At the end of the period of time, the patients for whom a decision to admit has been made will either:

a. have been admitted,

b. have had arrangements made but were not admitted, or

c. still be waiting, with or without a date, for admission.

Information is required about the balance between expressed and met demand.

11.12 The number of patients waiting for elective admission will be affected by the number who have been admitted outside the district, who have recovered, have died or removed themselves from a list. Once placed on a list the patient's condition, his attitude to the condition or the doctor's may change, particularly when admission is long delayed. To ensure that resources are effectively used and that the maximum number of patients arrive when planned, we **recommend** that lists for elective admissions be reviewed regularly to remove patients no longer needing to be admitted, and the number removed for any reason other than elective admission be recorded.

11.13 Patients awaiting elective admission may be intended to stay in hospital overnight or not. Medical records departments frequently identify these types of patient separately and districts may wish to have information in this form.

DEMAND EXPRESSED IN TERMS OF WAITING TIME

Out-patients

11.14 The time patients wait for an out-patient appointment can be measured in a number of different ways, which include:

a. The total time spent waiting between date of referral and date of clinic appointment for those patients who have been seen in the clinic.

b. The time spent waiting from the date of referral to a census date for those patients who are still waiting to be seen in the clinic.

c. The time that patients would have to wait for an out-patient appointment if they were given the first non-urgent clinic appointment (many districts supply this information to general practitioners currently).

d. The estimated time that patients will have to wait for an out-patient appointment calculated as the ratio of the number waiting at the end of the time period to the number of scheduled appointments.

11.15 There has been little research into the merits of alternative ways of reviewing the time patients have spent or are likely to spend waiting for an out-patient appointment. This is an important data item which should be available in every district, but in the present state of knowledge we **recommend** that studies should be carried out to identify a measure that is relevant and administratively easy to collect for national comparative purposes, with the intention of making it a minimum requirement at a later date.

Patients for whom a decision to admit has been made

11.16 Waiting time for admission to hospital can be recorded for the three groups of patients set out in paragraph 11.6:

a. For all patients who have been admitted electively to hospital, the time between the decision to admit and the date of admission can be calculated. These data should be obtained from the patient information system.

b. For those still waiting to be admitted, a regular census can be done to determine the distribution of their waiting time to date.

c. A cohort of all the patients for whom a decision to admit has been made during a specified time period can be followed up at regular intervals and the number in the cohort admitted at different times recorded.

Total waiting time

11.17 Elective admissions to hospital frequently 'queue' twice, initially for an out-patient appointment and then for admission, and it would be valuable to know the total time spent waiting. It would be possible to calculate this using the data items date of referral to out-patient clinic and date of admission to hospital, but total waiting time is only relevant if the greater proportion of patients have a decision to admit made at their first out-patient appointment. The frequency with which this occurs is not known and thus we **recommend** that research should be carried out to review methods of collecting data about total waiting time and to assess its usefulness as a measure of demand. If this is found to be a useful measure, the data item the date of the receipt of a referral to an out-patient clinic should be added to the minimum data set for the patient information system. It is possible to obtain this information in districts with a patient administration system covering out-patient clinics, waiting lists and bed usage.

Statistics for district management

11.18 We **recommend** that the following data items about expressed and unmet demand be collected about out-patient clinics; information should be presented by specialty and at regular intervals:

a. Number of written requests made by general practitioners for appointments with the consultant.

b. Number of written requests made by general practitioners where the patient had not been given an appointment occurring before the end of the period. This figure includes referrals made both before and during the period in question.

These data items should be included in the out-patient clinic data set described in Chapter 10.

11.19 The measures recommended in the preceding paragraph amend the proposals put forward in our interim report. Piloting and consultation have shown the practical difficulty of capturing and recording any requests other than those made in writing. It is however feasible to record the number of written requests made by general practitioners and changes in this statistic should reflect changes in the total number of requests.

11.20 We **recommend** that the following data items about demand should be collected about elective admissions; information should be available by specialty and at regular intervals:

a. *Events occurring during the period:*
  i. Number of patients for whom a decision to admit has been made during the period.
  ii. Number of patients for whom arrangements to admit were made but who were not admitted because they failed to attend.
  iii. Number of patients for whom arrangements were made but admission did not take place because of cancellation by the hospital.
  iv. Number of patients awaiting elective admission removed from a list for reasons other than elective admission.
  v. Number of patients admitted electively during the time period (this information to be obtained from the patient information system).
  vi. Proportion of total admissions that were elective, expressed as a percentage (from the patient information system).
  vii. The waiting experience of patients admitted electively, expressed as a distribution (from the patient information system).

b. *Position at the end of the period:*
viii. Number of patients still awaiting admission:
  (*a*) for whom a date of admission has been given, and
  (*b*) for whom no date of admission has been given.

ix. The distribution of waiting time to date of all patients still awaiting admission.

11.21 For local purposes it may be of use to subdivide the total figures recommended in paragraph 11.20 by:

a. consultant,
b. admission type (waiting list, booked, or planned),
c. intended management of the patient,
d. area of residence,
e. clinical urgency of patient, or
f. age and sex groupings.

Computerised information about patients awaiting admission

11.22 The analyses noted in the preceding paragraph will be facilitated by the holding of data about patients awaiting admission on a computer. We **recommend** that a district patient administration system should be able to produce information about patients awaiting admission. Many of the data items will be required for the patient information system when the patient is admitted and some will be available if the patient has attended an out-patient clinic. The minimum data set for each patient should be:

a. district patient number,
b. sex,
c. geographical code of current home address,
d. date of birth,
e. marital status,
f. code of appropriate general practitioner,
g. category of patient,
h. date it was decided there was a need to admit,
i. dates offered for admission,
j. outcome of each offer of admission,
k. date removed from the list, and
l. reason for removal from the list.

11.23 We **recommend** that the outcome of each offer of admission be classified as:

a. patient admitted,
b. admission cancelled by patient,
c. admission cancelled by hospital, or
d. patient failed to arrive.

11.24 We **recommend** that the reason for removal from a list be classified as:

a. patient admitted electively,
b. patients admitted as an emergency,
c. patient dead, or
d. patient removed for other reasons.

11.25 The relationships between the various data items described in paragraphs 11.18 and 11.20 are shown in Figure 1.

Information for DHSS and regions

11.26 The regions and the DHSS will require information for planning and review purposes. Therefore, we **recommend** that each district regularly send a return to region based on the data sets recommended in paragraphs 11.18 and 11.20. Regions will then produce a regular summary of the district information for transmission to the DHSS. A specimen district summary about the demand for elective admission is shown in Table X. The data required about demand for out-patient clinics is shown in Table IX.

Figure I THE RELATIONSHIPS BETWEEN EXPRESSED, MET AND UNMET DEMAND

In these diagrams the time period for data collection has been taken as one year.

a. **Out-patient referrals**

Expressed demand	**Met demand**	**Unmet demand**
GP REFERRAL REQUESTS MADE DURING THE YEAR	* ALL REFERRALS SEEN DURING THE YEAR	* REQUESTS FOR GP REFERRAL WITHOUT AN APPOINTMENT OCCURRING BEFORE END OF YEAR
	Attempt to meet demand	
	* ALL REFERRALS FOR WHOM APPOINTMENT WAS MADE BUT DID NOT ATTEND DURING YEAR	

* These figures may include patients whose request for referral was made in previous years.

b. **Elective admissions**

Expressed demand	**Met demand**	**Unmet demand**
ADMISSION DECISIONS MADE DURING THE YEAR	* PATIENTS ADMITTED DURING THE YEAR	PATIENTS AWAITING ADMISSION AT END OF THE YEAR a. ADMISSION DECISION MADE DURING THE YEAR. b. ADMISSION DECISION MADE IN PREVIOUS YEARS.
	Attempt to meet demand	
	* PATIENTS FOR WHOM ARRANGEMENTS MADE BUT NOT ADMITTED DURING THE YEAR	

* These figures may include patients for whom the decision to admit was made in previous years. However, knowing the demand expressed during the year and the proportion of that demand still unmet at the end of the year, the demand that was met and attempted to be met during the year can be calculated.

Table X. District summary of demand for elective admission

i. EVENTS OCCURRING DURING TIME PERIOD

Specialty	Decisions to admit	Admissions arranged		Removals other than admissions	Elective/ total admissions %	Patients admitted electively – months waiting 3 month groupings
		Admitted	Not admitted			

ii. POSITION AT END OF TIME PERIOD

Specialty	Numbers waiting for admission			Waiting time – months waiting 3 months groupings
	With date	No date	Total	

12 Information about operating theatres

Introduction

12.1 No information about operating theatre allocation and usage is available currently on a national basis. Information about operating theatre costs used to be available in the Hospital Costing Returns. There has been considerable criticism about the lack of data concerning this important resource.

The operating theatre

12.2 An operating theatre is a room within a hospital containing one or (in the case of a double operating theatre) two operating tables or other similar devices. An operating theatre accommodates one or (in the case of a double operating theatre) two patient(s) at a time, during and only during the period in which, under the direct personal supervision of a medical or dental practitioner, the patient(s) can undergo operative treatment in pregnancy or childbirth or for the prevention, cure, relief or diagnosis of disease.

12.3 The facilities needed for the bulk of the work and available for all patients shall permit:

a. positioning the patient(s) on the table(s) or the device(s) so as to render the operative treatment possible or convenient;

b. adjustable illumination of sufficient power to permit fine or delicate work;

c. the operative treatment to take place in aseptic conditions which shall include the provision of sterile instruments and facilities for all staff to change clothing; and

d. the provision of pain relief during the operative treatment more elaborate than basal sedation administered in the ward, self administered inhalation, or infiltration with local anaesthetic; for example general, spinal or epidural anaesthesia or nerve blocks with local anaesthetic.

12.4 It should be noted that:

a. Obstetric delivery rooms containing a delivery bed are not included in this definition.

b. Dental treatment rooms or surgeries containing a dental chair are excluded.

c. X-ray rooms, whether diagnostic or therapeutic, are excluded.

d. A double theatre, as defined in preceding paragraphs, is to be distinguished from twin theatres which are in proximity, share certain supporting facilities but are separate rooms each with its own table. Twin theatres should be recorded as two single theatres.

e. The presence or absence of an anaesthetic room and/or post-operative recovery room will affect markedly the volume of work in an operating theatre.

12.5 Although an operating theatre is potentially usable 168 hours a week, most theatres are staffed and available only for certain fixed periods of time. The periods for which they are staffed can be divided into:

a. Scheduled theatre sessions primarily for cases planned in advance: periods of time allocated to a consultant on a regular basis in which he can perform operations, the majority of which have been arranged beforehand. Information is required not only about the number of sessions that take place but also about the number that are intended to occur but were cancelled.

b. Scheduled theatre sessions for emergency theatre cases only.

c. Time for which the operating theatre is staffed and equipped to cope with emergency theatre cases.

d. Time for maintenance and cleaning.

12.6 As is the case with the out-patient clinic, the scheduled session will differ in its duration in different hospitals and districts. For local purposes it may be worthwhile expressing the time allocated to consultants for routine lists in terms of the hours of operating time available. Such a refinement would permit greater precision in the recording of operating theatre statistics and would thus provide more valuable information for those planning and reviewing the use of resources. Although during consultation and piloting of our interim report it was shown that some districts can and do use this unit of resource for operating theatre statistics, this work is not yet at a stage to allow the inclusion of operating theatre hours as part of the minimum data set. However, we **recommend** that further development work in this area be encouraged with the intention of its becoming a minimum requirement at a later date.

12.7 A suitably designed theatre register makes it possible for information to be obtained about the duration of individual operations. Operating time should include all the time during which the patient is treated in the theatre and in the anaesthetic or post-operative room. This includes time spent on the induction and establishment of anaesthetic whether general or local, setting up apparatus for patient monitoring, positioning the patient, performing the operation, applying dressings, bandages or plaster of Paris, and on immediate post-operative resuscitation when necessary. It does not include the time spent in an anaesthetic room awaiting attention or in a post-operative recovery room awaiting transport back to the ward.

Statistics for district management

12.8 Each district team should be aware of the theatre resources for which it is responsible and should receive regular information about how they have been used inside and outside scheduled sessions. The primary source of the data will be the theatre register. We **recommend** that the minimum set of data items collected should be:

a. *Information about the operating theatres in the district for the period:*

- i. Number of operating theatres, indicating presence or absence of an anaesthetic and/or post-operative room.
- ii. Total number of scheduled sessions intended to take place.
- iii. The presence or absence of a service outside scheduled sessions.

b. *Information about the allocation and use of operating theatres by individual or groups of consultants:*

- iv. Total number of scheduled sessions which were held.
- v. Total number of scheduled sessions which were cancelled.
- vi. Total number of cases done within scheduled sessions.
- vii. Total number of cases done outside scheduled sessions.

Items ii and iv–vi should be subdivided by the type of session; whether primarily for cases planned in advance or for emergency theatre cases only.

12.9 Additional information that districts might find of use to collect by regular or ad hoc survey includes:

a. Cases done within scheduled sessions primarily for those planned in advance, subdivided into routine and emergency theatre cases.

b. Over and under-running of operating lists. Using a locally agreed figure the number of lists which under or over-run the agreed time can be recorded.

c. Reasons for cancellation of operating lists.

d. Classification of the types of case being done.

e. Measurement of the amount of theatre time which was used for cases operated upon outside scheduled sessions.

12.10 Routine and emergency theatre cases should be defined as follows:

a. Routine theatre cases: patients for whom arrangements have been made in advance. These cases may have been admitted to hospital either electively or as emergencies.

b. Emergency theatre cases: patients whose visit to the operating theatre was not foreseen but takes place as a result of illness or a complication requiring an urgent operation. These cases may have been admitted to hospital either electively or as emergencies and the operation may take place during or outside either type of scheduled session.

Information for DHSS and regions

12.11 The regions and the DHSS will require information about operating theatres for planning and review purposes. Therefore, we **recommend** that each district send a return at least annually to region based on the data set recommended in paragraph 12.8. Regions will then produce an annual summary of the district information using the specialty groupings recommended in Chapter 5. A specimen district summary is shown in Table XI. This information will be of use to both the NHS and the DHSS for reviewing inter-district differences. If information is required about the number of operations done on private patients it can be obtained from the patient information system.

Operations and operative procedures

12.12 The patient information system will include details of all the operations and operative procedures done during each consultant episode. These data will be a valuable source for ad hoc studies. However, it must be noted that a patient may have more than one operative procedure done at the same time and that not all procedures are done in an operating theatre. Statistics about operations and operative procedures obtained from the patient information system will thus not necessarily correspond to the total number of cases done as recorded in operating theatre usage statistics.

Table XI District summary of operating theatre availability and use returned annually

SPECIALTY	SCHEDULED SESSIONS		CASES DONE	
	HELD	CANCELLED	IN SCHEDULED SESSIONS	OUTSIDE SCHEDULED SESSIONS
TOTALS				
Total number of operating theatres in district =				

13 Information about facilities for day care

Introduction

13.1 Information about patients attending for day care is currently collected on the SH 3 return. However, the category of regular day patients includes both patients admitted to a hospital bed on a planned regular basis (e.g. intermittent dialysis or patients on regular chemotherapy) as well as the patients regularly attending a day care facility which is not equipped with hospital beds. Detailed information about psychiatric day hospitals is currently collected on form SBH 112. Criticisms made of the current statistics include:

a. imprecise and inappropriate definitions of facilities providing regular day care, and

b. inappropriate data items collected and inappropriate definitions used for classifying the population using the facilities.

13.2 Attenders at a day care facility should not be confused with the other types of day patient referred to in this Report, namely:

a. *Day case admissions:* patients who receive medical or surgical treatment usually completed on one occasion and which necessitates the use of a hospital bed.

b. *Regular day admissions:* patients admitted to a hospital bed during the day at regular intervals on a planned basis.

c. *Ward attenders:* patients attending a ward who do not require the use of a hospital bed. In places without a specific day care facility, some of these patients may have the same needs and be receiving the same care as regular day attenders at a day care facility.

NHS day care facilities

13.3 Day care facilities are provided by health authorities for the clinical treatment, assessment and maintenance of function of patients, in particular those who are elderly and mentally ill or mentally handicapped. These facilities are staffed by the health service and referral to and discharge from the day care facility are arranged by a doctor. The type of care provided distinguishes NHS day care facilities from those provided by local authorities. NHS facilities may be called day hospitals, day centres, or day units; conventionally day hospitals are provided by the NHS and day centres by social services departments.

13.4 NHS day care facilities may be sited within the grounds of a hospital, may be provided from a purpose built unit not associated with other hospital facilities, or may be provided from any building which is appropriate. The range of provision usually includes the following areas—dining, treatment and therapy areas, bathroom and lavatory and day room. These facilities specifically do not have hospital beds nor are they part of a ward in the sense that these have been defined in paragraph 3.12. All the treatment and care required by patients attending may not necessarily be provided within the facility but it is the base from which patients move to other departments: normally it is the place at which any attendance commences and finishes.

13.5 Day care facilities are usually open during the five week days but not at night. In some places the service may be provided only once or twice a week, particularly in rural areas with small, scattered populations where NHS staff may travel from place to place often providing a service from non-NHS premises.

13.6 There is considerable overlap between the health service and local authority provision of facilities for day care. Facilities may be managed by health authorities, local authorities, voluntary organisations or jointly. We **recommend** that each district should have information about the availability and use of all the day care facilities in its locality. Health authorities will have to negotiate with the other appropriate bodies for this information.

13.7 Each facility is usually deemed to have a capacity, i.e. an agreed number of places available each day. Patients may not necessarily attend for the whole day, so attendances may exceed the number of places depending on local operational policies.

Attenders at NHS day care facilities

13.8 NHS day care facilities are used by two distinct populations:

a. Patients using hospital beds who attend a day care facility as part of their treatment. Should they, on discharge, be required to continue attending the day care facility, they will then be regarded as regular day attenders and their first visit after discharge registered as a new attendance.

b. Regular day attenders; patients attending the facility who are not also currently using a hospital bed.

13.9 Some patients may transfer between day care facilities serving the same function. If the transfer is between facilities within the same district, the first time the patient attends the second facility should be recorded as a re-attendance and not a first attendance.

Statistics for district management

13.10 Each district team should be aware of the day facilities for which it is responsible and should receive regular information on how they have been used. Each facility should have a register of attendance and this should be the source of activity data. We **recommend** that the following minimum set of data be collected for NHS day care facilities and when possible about facilities run by other organisations:

a. *Information about the NHS resources used for regular day care in the district in the period:*

- i. Name and siting of each facility with details of its function and specialty of consultant in charge.
- ii. Number of days for which it was intended that the facility should be available.
- iii. Number of places intended to be available each day.

b. *Information about the use of each facility:*

- iv. Number of place days which were available (sum of the places that were available on each day that the facility was open).
- v. Number of place days which were cancelled.
- vi. Number of attendances by regular day attenders.
- vii. Number of regular day attenders making their first attendance (excluding those transferred from other similar day care facilities in the district).

viii. Number of regular day attenders on the register at the end of the period.
ix. Number of attendances at the facility by patients using a hospital bed.
x. Number of patients using a hospital bed making their first attendance.

13.11 Facilities for day care are most frequently supervised by consultants in one specialty but they may also be shared either simultaneously or alternately (e.g. three days for the geriatricians, two days for the psychiatrists). Where possible, information about the use of day care facilities should be presented by specialty and function. For comparative purposes we **recommend** that the following classification be used:

Specialty	*Function*
Geriatric medicine	—
Mental illness	General
Mental illness	Psychogeriatrics
Mental handicap	—
—	Younger physically disabled

13.12 Additional information that districts might find of use to collect either regularly or on an ad hoc basis includes:

a. Age and sex of attenders.

b. Information on the appropriate use of the facility, identification of individual patient needs, and patterns of treatment and attendance. This can best be done by a census.

c. Information about the availability of transport to the centre, particularly the ambulance service.

d. Information about the level and cause of non-attendance.

Information for DHSS and regions

13.13 The regions and the DHSS will require information for planning and review purposes. Therefore, we **recommend** that each district send a return at least annually to region based on the data set recommended in paragraph 13.10. Regions will then produce annually for the DHSS a summary of the district information using a combination of the specialty and function titles in paragraph 13.11. A specimen district summary is shown in Table XII.

Table XII District summary of NHS day care facility activity returned annually

SPECIALTY	FUNCTION	NUMBER OF DAY-PLACES WHICH WERE AVAILABLE	REGULAR DAY CARE ATTENDERS			PATIENTS USING A HOSPITAL BED	
			TOTAL ATTENDANCES	FIRST ATTENDANCES	ON REGISTER AT END OF PERIOD	TOTAL ATTENDANCES	FIRST ATTENDANCES
Geriatrics	—						
Mental Illness	General						
Mental Illness	Psychogeriatrics						
Mental Handicap	—						
—	Younger disabled						
Others; please specify							

14 Information about accident and emergency departments

Introduction

14.1 Information about the work done in accident and emergency departments is currently available from form SH 3 which records the new and total attendances at each department. Criticisms of the current data include:

a. Statistics do not adequately reflect the volume of work done in a department.

b. There is a lack of information about the characteristics of patients using a department.

c. There is uncertainty about what comprises the work of a department.

Accident and emergency departments

14.2 Accident and emergency departments may be either major units providing a 24 hour service seven days a week, to which the great majority of emergency ambulance cases are taken, or small units, commonly called casualty departments, in which services are often only available during limited hours and which may not deal with emergency ambulance cases.

14.3 The main function of an accident and emergency department is to provide a service which offers care for patients who arrive with urgent problems and who have not been seen previously by a general practitioner. In the case of serious illness or accident the treatment provided in the department will usually be initial resuscitation only before the patient is admitted to a hospital bed. A small proportion of patients seen in accident and emergency departments are referred by a general practitioner who requests help either with diagnosis or treatment (e.g. suturing or opening of an abscess).

14.4 An accident and emergency department may also be used as the admission point for emergency patients referred to hospital consultants by general practitioners. The number of patients passing through departments in this way is considerable, but in many districts medical staff of an accident and emergency department are not involved in their care. Such patients do, however, occupy space and require nursing attention.

14.5 In some accident and emergency departments, additional activities may take place. These include:

a. Elective surgical work of a minor nature (e.g. sebaceous cyst excision).

b. Observation and treatment of patients in beds either within or adjacent to the department. The patients remain in the care of the staff of the accident and emergency department and conditions commonly treated in this way include minor head injuries, overdoses and minor fractures.

c. The holding of an out-patient clinic, particularly fracture clinics run by orthopaedic surgeons.

Information about patients

14.6 Information about some of the work carried out in accident and emergency departments should be recorded in data systems discussed in previous Chapters:

a. Patients attending an out-patient clinic held in the department should be recorded as out-patients as described in Chapter 10.

b. Patients using a bed (as defined in Chapter 3) associated with the department should be included as part of the computerised patient information system and the data items described in Chapter 5 should be collected.

c. Information about the number of emergency admissions and their method of referral is available from the computerised patient information system. At present there is considerable confusion about which of these patients should be counted on the department return. Although some emergency admissions may have been pre-arranged and only lodge in the accident and emergency department without needing the attention of department medical staff, they do constitute work for nurses and should be separately identified from attenders at the accident and emergency service.

14.7 The major work of the department, however, is the accident and emergency service which is concerned with patients who see the medical staff of the department for advice or treatment. To form the data base for these patients, we **recommend** that a record or register be kept in each department.

Statistics for district management

14.8 Information may be required at district level for two main purposes:

a. the review of the work of the department and the planning of accident and emergency services, and

b. the compilation of a data base for accident prevention programmes

14.9 Total attendances at accident and emergency departments in England are over 13 million each year, of which 9 million are new patients. Although details of these patients are recorded in a register and on casualty record cards, the task of aggregating these data is enormous. The aggregation of patient characteristics and administrative and clinical details, and the cross-tabulation of one item against another can only be achieved practically with the use of a computer. We **recommend** therefore that the national minimum data set for an accident and emergency department should only comprise regular information about:

a. Number of new attendances for the accident and emergency service; a new attendance is the first of a series or the only attendance for the same ailment.

b. Number of follow-up attendances for the accident and emergency service.

c. Number of patients lodged in the accident and emergency department prior to admission.

14.10 In a few districts information about the accident and emergency service has been computerised. Such computer applications have been successful and found to be of great use to the consultants in charge of these departments. We **recommend** that computer systems for an accident and emergency service should be further developed and introduced more widely in the NHS.

Computerised information systems

14.11 Where computer systems have been installed they assist consultants to respond effectively to the workload presented so that staffing patterns are related to workload, delays are monitored and the patient's progress through the department is reviewed. In these circumstances considerably more information is available. We **recommend** that a minimum set of data be available from departments with a computer to allow each department to compare its workload with others and that the following data items be collected for each patient:

a. accident and emergency department number,
b. new or follow-up patient,
c. time and date of arrival,
d. date of birth,
e. sex,
f. area of residence code,
g. code of general practitioner,
h. initiator of referral,
i. mode of arrival,
j. patient group,
k. type of incident (if an accident or trauma case), and
l. method of departure.

14.12 We **recommend** that the initiator of the attendance be classified as follows:

a. A written or telephoned request from a general practitioner.

b. The patient sent by others (e.g. by foreman, schoolteacher).

c. The patient referring himself, and making his own arrangements for attendance.

d. The patient being brought in by others, usually as a result of an emergency call to the ambulance service.

e. Staff of the accident and emergency department.

14.13 We **recommend** that the mode of arrival be classified as:

a. Walked to the department.
b. Arrived by public transport, other than the ambulance service.
c. Arrived by private transport.
d. Brought in by ambulance.

14.14 Nationally about 70% of new attendances at accident and emergency departments are due to accident or trauma including poisonings. We thus **recommend** that the classification of patients into broad groups be as follows and that these data be input after the patient has been seen by a doctor:

a. Accidents.
b. Deliberate self harm.
c. Assaults.
d. Stings and bites.
e. Conditions not due to trauma or an accident.
f. Patients who had no abnormality detected.
g. Patient dead.

14.15 For trauma and accident cases (items a–d in the preceding paragraph) it is important to record the type of the incident. We **recommend** that this be classified as:

a. Accident or trauma at home (home being defined as for the Home Accident Surveillance System).
b. Road traffic accident.
c. Injury due to sport.

d. Accident or trauma at work.
e. Accident or trauma in an educational establishment.
f. Accident or trauma in a public place.
g. Other types.

14.16 We **recommend** that the method of departure be classified as:

a. Left the department before being treated.
b. Left the department having refused treatment.
c. Allowed home with or without an appointment at the department or at an out-patient clinic.
d. Admitted to a bed associated with the department.
e. Admitted to a hospital bed other than one associated with the department.
f. Died in the department.

14.17 Additional items that might be collected in individual departments for internal management purposes include:

a. name of the doctor seeing the patient,
b. time that patient was seen by a doctor,
c. time the patient left the department,
d. investigations ordered for the patient, and
e. procedures ordered for the patient.

Information for DHSS and region

14.18 The regions and the DHSS will require information for planning and review purposes. Therefore, we **recommend** that each district send a return at least annually to region based on the data set recommended in paragraph 14.9. Region will then produce a summary of the district information annually for transmission to the DHSS. Only the number of new and follow-up attendances for the accident and emergency service are required centrally.

14.19 The regions and the DHSS will be able to obtain more detailed information about the work of an accident and emergency service from those departments with a computerised information system. We **recommend** that data output from these departments containing the data items noted in paragraph 14.11 be available to the regions and to the DHSS.

Information about accidents

14.20 Information about the direct physical cause of an accident and where it occurred can be obtained for patients admitted to a hospital bed by using the E codes of the 9th revision of the ICD. Statistics about different types of accident are essential for the proper planning of national prevention campaigns and legislation, and we **recommend** that the type of accident be identified by the use of ICD E codes for all patients on the patient information system who have had an accident.

14.21 There is both national and local interest in detailed information about different types of accidents. The Department of Trade runs the Home Accident Surveillance System to collect data from a sample of twenty hospitals. Staff to do this are both trained and funded by central government. The Department of Transport has an interest in the details of road traffic accidents, particularly as legislation about new safety measures is introduced. Many districts have mounted specific accident prevention campaigns and data from accident and emergency departments are required to plan and monitor such campaigns.

14.22 The approach adopted for the Home Accident Surveillance System is to be applauded, and we **recommend** that when central government departments want information about specific types of accident, this is obtained from surveys or a sample of departments, and that health districts should be funded for the extra work involved.

14.23 The computerisation of information systems for accident and emergency services will make it easier to collect detailed information about accidents. We **recommend** that work be commissioned to identify a minimum set of data items applicable to each of the main types of accident and to agree a common method of classifying diagnoses which is, if possible, compatible with the ICD 9 E codes. Each department with a computer would then have a range of optional data sets to be collected depending on local or national interest in a particular type of accident.

15 Information about diagnostic departments

CURRENT INFORMATION SYSTEMS

15.1 Data about diagnostic services are currently collected by two national returns, namely:

a. form SBH 6 for pathology departments, and

b. form SH 3 for radiology and other diagnostic services.

Pathology

15.2 A request for a pathology investigation may entail the performance of one or more tests and each test may consume different amounts of resource. This is reflected in the current statistics by a count of the requests and the use of weighting factors which are intended to reflect the difference in work generated by each request. In addition each laboratory takes a monthly sample of requests and records the total number of tests ordered on them in order to calculate a ratio of tests to requests.

15.3 Every laboratory of each pathology discipline is required to provide for the DHSS the total number of requests received from:

a. the main hospital that uses the laboratory,

b. other hospitals,

c. general practitioners,

d. the public health laboratory service, and

e. other sources.

15.4 Form SBH 6 also requires the recording of:

a. the number of requests,

b. the average test/request ratio,

c. the number of post-mortems performed,

d. the number of pregnancy tests,

e. the number of pathology specimens collected by laboratory staff other than medical staff, and

f. the number of requests referred to other laboratories.

15.5 The main criticisms of the current system are:

a. Nationally established weighting factors are inappropriate for local use because of differences in levels of automation, the range of services provided and variations in staffing numbers.

b. A test/request ratio established for a single pathology discipline is an average and thus does not demonstrate the differing workloads generated by different clinical specialties. Therefore, it cannot be used in association with the number of requests to reflect the laboratory resources consumed at the instigation of the individual clinical specialties.

c. Activity is not analysed in terms of the clinical initiator of the request.

d. It is not possible to link data about activity in pathology departments with other data about clinical activity.

e. The total number of requests, with or without weighting, gives no indication of the types of tests done.

Radiology

15.6 The current statistical system records the work done on the basis of a schedule of radiographic unit values. Each radiological examination is assigned a value which reflects the time radiographers spend in performing it. The current schedule, introduced in 1973, includes over 200 separate examinations, each of which is assigned one of fifteen different values.

15.7 Each radiology department is required to return on form SH 3 the total value of units used for the following categories of patient:

a. in-patients and out-patients,

b. patients in accident and emergency departments,

c. patients referred from general practitioners,

d. patients from other hospitals, and

e. work generated from other sources.

15.8 The main criticisms of the current system are:

a. the sum of unit values gives no indication of the types of examination performed,

b. the unit values, being based on radiographer time only, do not reflect the resources used overall,

c. activity is not analysed in terms of the clinical initiator of the request, and

d. it is not possible to link data about activity in radiology departments with other data about clinical activity.

Other diagnostic services

15.9 Activity in other diagnostic departments is also recorded on form SH 3. The number of patient attendances for investigation is recorded as follows:

a. new attendances by in-patients,

b. total attendances by in-patients,

c. new attendances by out-patients, and

d. total attendances by out-patients.

INVENTORY OF RESOURCES

15.10 Although few districts currently collect information about the resources used by the diagnostic services, information should be available which describes the resources at the disposal of each department. We thus **recommend** that a regular inventory be made for each diagnostic department which includes as a minimum:

a. the number of staff in post by grade,

b. the type of equipment and premises available,

c. the date of installation of capital equipment which is purchased and replaced out of a regional capital programme, and

d. the financial budget for the department.

15.11 The inventory would be primarily for local use but, when equipment has been purchased and will be replaced out of a regional capital programme, we **recommend** that information be available to region as follows:

a. the type of equipment,

b. the location of the equipment, and

c. the date of installation of the equipment.

DATA ABOUT ACTIVITY

15.12 The complexity of the services provided by diagnostic departments allows scope for the collection of a wide range of data which can be classified as follows:

a. clinical data, relating to the care of the patient,

b. management data, necessary for the effective operation of the department and the control functions of the unit and district management tiers, and

c. information for quality control obtained through the continued surveillance of the processing of control specimens.

We have been concerned solely with recommendations about management data.

15.13 A basic source of data is the request form which commonly contains the following data about a patient:

a. full name,

b. patient registration number,

c. sex,

d. date of birth,

e. category of patient,

f. clinical team responsible for initiating request,

g. address from which request was sent (e.g. name of ward),

h. investigations required,

i. date of request, and

j. results of the investigation.

15.14 For the purposes of departmental management, we **recommend** that requests be identified by:

a. category of patient (NHS, private or Part II patient),

b. clinical team within the district responsible for initiating the request (consultant or GP), and

c. whether the request is for a patient in another district or in a private health facility; if the latter, it is necessary separately to identify requests received under a contractual agreement.

15.15 Our pilot studies showed that there are difficulties in identifying requests for investigations on private and Part II patients. However, such identification is required for charging purposes as well as for the management of the diagnostic services. In implementing this recommendation careful arrangements should be made which allow the clear identification of requests for these categories of patient.

15.16 The cost of all investigations is increased disproportionately if the request is received outside the normal operational hours of the department. We therefore **recommend** that out of hours requests be recorded separately. These data are available from the department day-book or register.

15.17 Five different options have been considered for describing the total activity of a department, namely:

a. a simple count of requests,

b. a count of the total number of investigations undertaken,

c. a comprehensive analysis to find out how many different types of investigation have been done,

d. an analysis of requests within broad groups defined in terms of resources consumed, and

e. a workload measurement system using national averaged values and designed to reflect the volume of work undertaken.

15.18 In different situations there may be attractions in each of these options but, to meet the need of NHS management for a simple system, we **recommend** that the basic statistical measure of activity within diagnostic departments be the number of requests received.

15.19 The approach proposed links the level of activity in diagnostic departments clearly to specific clinical events: requests represent questions posed by clinicians which in turn involve the consumption of resources. It also has the virtue of simplicity. The main alternative approach advocated during consultation on our interim report was the measurement of the number of investigations undertaken but this could increase substantially the volume of data to be collected without the extra effort securing commensurate benefits. A variety of techniques is used in different departments, the degree of automation varies and there is no indication that this diversity will diminish as new techniques are being developed. In these circumstances, use of a system measuring the number of investigations done does not allow the valid comparison of data from different districts.

15.20 In all diagnostic departments different investigations consume widely different resources. We **recommend** that, where it is feasible, a form of grouping of requests that consume broadly equivalent resources be adopted. The applicability of this approach to different diagnostic services is described later in this Chapter.

Pathology requests

15.21 Pathology laboratories offer a wide and increasing range of investigations which can be undertaken with a variety of techniques and equipment and in varying physical circumstances. With the rapid development of technology it is unreasonable to assume that common methods will be adopted nationally to undertake particular tests. Other factors, such as staffing policies for the use of graduate scientists or ancillary staff, add to this diversity of laboratory practice. The large volume of activity in terms of the number of tests undertaken is another factor that needs to be considered.

15.22 In attempting to record the work done, many methods have been suggested to tackle the problems of its diversity. Much attention has been given to a system developed in Canada which is based on an analysis of the work involved in completing each stage of a test procedure. This covers such aspects as preparing the specimen, carrying out the test and clerical work, and also takes account of whether the procedure is done manually or on automated equipment. Each test procedure is assigned a unit value equivalent to one minute of the time required to complete it. A common value for each test, where this is appropriate, is allowed for quality control and calibration. Schedules which contain the standard unit values for all laboratory procedures have been published for each branch of pathology. These values are designed to measure technical workload and are not directly applicable to overall costs because, for example, pathologists' salaries, supplies and equipment are not taken into account. Nor do they include other aspects of the work that contribute to total costs such as management responsibilities, training and research.

15.23 During the consultation on the interim report several respondents pressed for the adoption of this system but we do not believe that the use of Canadian Workload Units would overcome the criticisms of the present system. The Public Health Laboratory Service and a Working Party of the Scottish Home and Health Department have, after careful consideration, independently decided that the system could not be endorsed for universal routine use.

15.24 In our interim report we concluded that the use of a national measure responsive to the varying ways in which resources are used locally was not feasible and that in consequence a national system should rely on the use of the request as the basic statistical measure of activity. We suggested two optional additions that may be of use to local management namely:

a. retention of the test/request ratio but relating it to the requests from different clinical teams, and

b. the setting up of a sampling system to collect information about the number and frequency of particular tests.

15.25 Both options were criticised during consultation and we have therefore re-examined the possibilities for more responsive measures. However, the request for a pathology investigation remains the only common factor that can be recognised on a national basis because it reflects clinical events. The subsequent activity in the laboratory varies from department to department.

15.26 We therefore **recommend** that the minimum data collected be the number of requests received. This recommendation is put forward with a clear understanding that health authorities will wish to collect additional data to describe the local situation if firm control arrangements are to be instituted and improved management achieved. To assist authorities in these endeavours, we **recommend** that research be commissioned into the development of cost control techniques that could be adopted easily by local management.

15.27 To ensure that nationally available data are comparable, it is important that a common definition of pathology requests is used. We therefore **recommend** that a request for a pathology investigation be defined as:

a request for a pathology investigation on a single specimen or a group of related specimens taken from an individual patient and sent to a laboratory department at one time, regardless of the number of tests forming part of that investigation.

15.28 Examples of the application of the definition included in the preceding paragraph are:

a. In haematology, a request on a single specimen of blood from one patient could include a number of tests, for example a haemoglobin estimation, differential white blood cell count and a sickle cell test.

b. In histopathology, several pieces of tissue, such as multiple jejunal biopsies or a breast with associated tissues, would constitute one request if the clinical information sought is the presence or absence of malignant tissue.

c. In chemical pathology, a specimen of blood accompanied by a request for any number of different serum assays constitutes a single request.

d. In microbiology, several throat swabs, and samples of sputum and faeces asking for identification of the pathogenic organism with its antibiotic susceptibility constitute a single request.

e. In immunology, samples of one or more tissues with a request to identify one or more antigenic determinants with their phenotypes would constitute a single request.

15.29 A substantial contribution to the provision of microbiology services is made by the Public Health Laboratory Service (PHLS). At present this organisation has separate arrangements, not within the scope of our review, to collect statistical information about the isolation of pathogenic organisms from clinical and non-clinical specimens. These arrangements have recently been simplified. In addition some PHLS laboratories contribute to the DHSS statistical return SBH 6.

15.30 Health authorities will need a comprehensive picture of pathology services in a district for planning purposes. Such information will clearly also be valuable to the Public Health Laboratory Service. It would be to mutual advantage if the work undertaken by the PHLS for the health service were recorded in the way recommended in this Chapter.

Radiology requests

15.31 We are satisfied that there is sufficient commonality in the techniques used to undertake radiological examinations and the resources consumed to allow these examinations to be grouped for statistical purposes.

15.32 To ensure that the analysis of workload, using groups of examinations, reflects the resources consumed, four separate factors that contribute to overall costs have been considered and these need to be weighted to reflect their share of the overall costs:

a. the salary cost of radiographers accounting for about 50% of the revenue expenditure of a department,

b. the salary cost of radiologists accounting for about 20% of the revenue expenditure,

c. the cost of film and consumables accounting for about 15% of the revenue expenditure, and

d. the cost of capital equipment; this has a working life of about 10 years.

The remaining 15% of revenue spending is clerical costs and other overheads.

15.33 The cost of the radiographer's contribution represents the largest element of total costs. For this reason we decided to take as a starting point the radiographic work unit schedule (recently revised but not yet issued in its revised form) and a similar grouping arrangement used in Scotland, and then to assess the impact of the other factors which have been described. As a result of this work we **recommend** that radiological examinations be classified into six groups. The most expensive group consists of very specialised examinations and may not be relevant to all radiology departments.

15.34 We **recommend** that the number of requests for examinations in each of these groups be identified, a request being defined as:

a request for a single radiological procedure on an individual patient, regardless of the number of views taken or film used.

15.35 At Annex IV to this Report, as part of a national vocabulary for diagnostic services, there is a schedule of radiological and ultrasound examinations. This vocabulary will provide a guide to assist local managers to interpret statistical data and illustrates broadly the comparative costs of different examinations. The consultations and the feasibility trials we carried out identified some inconsistencies in the groupings contained in the interim report. The vocabulary takes account both of these findings and of detailed discussions with representatives of the Royal College of Radiologists and the College of Radiographers.

Nuclear medicine requests

15.36 The use of isotope procedures in nuclear medicine departments can be broadly equated to the type of services provided in radiology departments. Indeed, in many districts the service is provided as part of the radiology service.

15.37 We are satisfied that there is a commonality in the techniques used and **recommend** that procedures be grouped as recommended for radiology. The national vocabulary at Annex IV includes separate schedules of isotope procedures. These are based on the same broad costing method as is used for radiology and can therefore be used regardless of whether isotope procedures are undertaken in a radiology or a separate department.

15.38 We **recommend** that the number of requests for isotope procedures in each of these groups be identified, a request being defined as:

a request for a single isotope procedure on an individual patient.

Other diagnostic services

15.39 Apart from the major services that have been described, a wide range of physiological measurement and specialised investigations is performed. Some of these are provided directly by clinicians with an interest in the field, others by specific departments. As medical technology is developed the pattern is continually changing. Three particular physiological measurement techniques are used in significant numbers nationally, and we therefore **recommend** that data be collected routinely about:

a. requests for electrocardiograms (ECG),

b. requests for electro-encephalograms (EEG), and

c. requests for respiratory functions tests.

Electrocardiography

15.40 The majority of requests for ECG investigations involve the single use of the equipment, but a proportion require multiple use and additional staff time, and therefore consume more resources. To reflect these differences, we **recommend** that the procedures be grouped to reflect resource use. The national vocabulary at Annex IV includes a schedule for electrocardiography.

15.41 We **recommend** that the number of requests for ECG in the different groups be identified, a request being defined as:

a request for a single diagnostic investigation on an individual patient, regardless of the number of ECG's forming part of that investigation.

Electro-encephalography

15.42 A variety of EEG investigations is performed but the level of activity overall does not justify their differentiation in a nationwide routine statistical system. Individual health authorities should collect extra information if required.

We **recommend** that the number of EEG investigations requested be identified, a request being defined as:

a request for a single diagnostic investigation on an individual patient, regardless of the number of EEGs forming part of that investigation.

Respiratory function

15.43 Many routine respiratory function tests are now undertaken on wards or in out-patient clinics. Investigations undertaken in respiratory function departments mainly involve lung volume and diffusion capacity tests. A few more specialised investigations are also performed. The level of activity overall however does not justify detailed analysis in a nationwide routine statistical system.

15.44 We **recommend** that the number of requests for respiratory function investigations be identified, a request being defined as:

a request for a single diagnostic investigation on an individual patient, regardless of the number of specific tests forming part of that investigation.

STATISTICS FOR DISTRICT MANAGEMENT

15.45 Each district management team needs to know what resources are available to the diagnostic departments and how they have been used. We **recommend** that the following information be available for each of the diagnostic services provided in a district:

a. An inventory of departments and their resources (described in paragraph 15.10), and

b. Data about the activity of each department recorded as follows:
   i. number of requests received, analysed by broad groups if appropriate,
   ii. number of requests received from different hospital consultant firms or general practitioners,
   iii. number of requests received for private and Part II patients,
   iv. number of requests received from outside the district or from private facilities, and
   v. number of requests received inside and outside normal hours.

15.46 We have considered the possibility of routinely bringing together data about activity in the diagnostic departments with data from computerised patient administration systems. Such arrangements would allow the analysis of the use of particular investigations for patients with particular diagnoses. It is not possible to commend this as a minimum requirement because it is too costly. But we **recommend** that such linkages be developed where there is a local commitment to use the information that would be made available.

INFORMATION FOR DHSS AND REGIONS

15.47 The regions and the DHSS will require information for planning and review purposes. Therefore, we **recommend** that each district regularly send a return to region based on the information recommended in paragraph 15.45. Regions will then produce an annual summary of district information for transmission to the DHSS. The national returns should identify information related to the following diagnostic departments:

a. Pathology – separately for:
   i. Chemical Pathology,
   ii. Haematology,
   iii. Histopathology (including cytology and neuropathology),

    - iv. Immunology, and
    - v. Microbiology.
- b. Radiology.
- c. Nuclear medicine (where appropriate).
- d. Physiological measurement – separately, where appropriate, for:
    - i. Electrocardiography,
    - ii. Electro-encephalography, and
    - iii. Respiratory function.

This information should relate to departments which are managed as a separate entity either by a consultant or a person of equivalent status. Specimen district summaries are shown in Tables XIII to XV.

15.48 We recognise that the DHSS may need access, from time to time, to more detailed information to provide an insight into the activity of diagnostic departments, such as the frequency of different investigations or the pattern of patients seen. We have considered how such information might be provided economically and **recommend** that the DHSS should pursue the possibility of obtaining comparable data from those departments that have installed computers to record departmental activity.

Table XIII District summary of activity in diagnostic departments returned annually

A. PATHOLOGY SERVICES

REQUESTS IN RESPECT OF:	CHEMICAL PATHOLOGY	HAEMATOLOGY	HISTOPATHOLOGY AND CYTOLOGY	IMMUNOLOGY	MICROBIOLOGY
a. NHS patients i. by NHS laboratories ii. by PHLS laboratories					
b. Private patients					
c. Contractual arrangements					
d. Part II patients					
e. Total requests					
Total number of departments within district					

Table XIV District summary of activity in diagnostic departments returned annually

B. RADIOLOGY SERVICES

REQUESTS IN RESPECT OF:	RADIOLOGY — CATEGORY OF PROCEDURE						NUCLEAR MEDICINE — CATEGORY OF PROCEDURE			
	A	B	C	D	E	F	II	III	IV	VI
a. NHS patients										
b. Private patients										
c. Contractual arrangements										
d. Part II patients										
e. Total requests										
Total number of departments within district										

Table XV District summary of activity in diagnostic departments returned annually

C. PHYSIOLOGICAL MEASUREMENT

REQUESTS IN RESPECT OF:	ELECTROCARDIOGRAPHY INVESTIGATIONS CATEGORY OF PROCEDURE		ELECTROENCEPHALOGRAPHY INVESTIGATIONS	RESPIRATORY FUNCTION INVESTIGATIONS
	A	B		
a. NHS patients				
b. Private patients				
c. Contractual arrangements				
d. Part II patients				
e. Total requests				
Total number of departments within district				

Part IV Summary of recommendations and Annexes

SUMMARY OF RECOMMENDATIONS

Chapter 3
Scope of the Report

1. All nationally available data collected by facility returns should be aggregated on the basis of a financial rather than a calendar year (paragraph 3.17).

Chapter 4
Integrated patient information

2. A minimum set of data should be collected by a single patient information system on all patients who occupy a bed in a ward (paragraph 4.7).

3. The patient information system should be input and accessed within the district where the data required can be obtained as a by-product of operational management from a patient administration system (paragraph 4.10).

4. Local computerised patient administration systems and the regional and national data bases drawn from them should be considered as a single entity (paragraph 4.11).

5. There should be two basic components of the patient information system, the consultant episode and the ward stay (paragraph 4.16).

6. The highest level for linking consultant episodes and ward stays should be the district (paragraph 4.17).

7. Data should be put into the computer in stages such that data on admission, transfer and discharge can be merged (paragraph 4.18).

8. Each consultant episode warrants a data set including diagnoses and operative procedures (paragraph 4.21).

9. At the end of each consultant episode, two separate sets of data should be input, one containing non-clinical data which should be submitted at discharge or transfer, the other containing clinical details (paragraph 4.22).

10. A district numbering system, form numbers and episode numbers should be used to ensure the successful merging of data inputs (paragraph 4.24).

11. The data items recorded for a mother admitted to a maternity ward but who does not produce a registrable baby should be the same as for any other patient (paragraph 4.30).

12. A national minimum set of data items should be collected for each registrable birth regardless of whether the delivery is in hospital or at home (paragraph 4.30).

13. At delivery each infant should be identified administratively and documented as a patient (paragraph 4.30).

14. For each pregnancy resulting in a registrable birth there should be a minimum data set for the mother and each baby (paragraph 4.30).

15. The data about mother and each baby should be brought together by means of the delivery/birth notification with a few items obtained from registration (paragraph 4.30).

16. Successive district spells in the same pregnancy should be able to be brought together for the purpose of analysis (paragraph 4.30).

Chapter 5
Minimum data set for the patient information system

17. The data items to be input at the following stages are listed:

a. admission (paragraph 5.3),

b. the start of each consultant episode (paragraph 5.19),

c. the start of each ward stay (paragraph 5.22),

d. discharge (paragraph 5.25), and
e. the end of each consultant episode (paragraph 5.28).

18. Classifications for or the coding of the following data items are described:

a. geographical code of current home address (paragraphs 5.4 and 5.6),
b. marital status (paragraph 5.8),
c. appropriate general practitioner (paragraphs 5.10 and 5.11),
d. category of patient (paragraph 5.12),
e. method of admission (paragraph 5.13),
f. source of admission (paragraph 5.14),
g. date of first ante-natal assessment (paragraph 5.17),
h. intended management of the patient (paragraph 5.18),
i. consultant (paragraph 5.21),
j. method of discharge (paragraph 5.26),
k. destination on discharge (paragraph 5.26),
l. diagnoses (paragraphs 5.31 and 5.34 to 5.38), and
m. operations (paragraphs 5.39 to 5.42).

19. Items of information that may be derived from the minimum data set are noted (paragraph 5.43) and classifications and methods of derivation described for the following:

a. duration of stay (paragraph 5.46), and
b. patient classification (paragraph 5.47).

20. Further work is required to:

a. determine the feasibility of collecting data routinely by direct question about people living alone rather than using marital status as a proxy (paragraph 5.9),

b. determine the relevant factors involved in identifying support for a mother (paragraph 5.9),

c. identify what constitutes shared care and ways of recording it (paragraph 5.21),

d. identify and classify patients who go home for a short period with a view to returning to a hospital in the same district for further treatment (paragraph 5.24),

e. define the normal, special and intensive care of neonates (paragraph 5.36), and

f. assess ways of collecting accurate social class data about patients using a hospital bed (paragraph 5.55).

Chapter 6
Registrable births

21. The data items to be collected by notification and from registration are listed (paragraphs 6.4 and 6.12) and classifications described for the following items:

a. place of delivery (paragraph 6.5),
b. reason for change (paragraph 6.7),
c. length of gestation (paragraph 6.8),
d. method of onset of labour (paragraph 6.10), and
e. method of delivery (paragraph 6.11).

22. The data items to be included in the clinical options are described (paragraphs 6.13 and 6.14).

23. Further work is required to develop the classification of the reason for the change of place of delivery if different from that initially intended (paragraph 6.7).

Chapter 7
Psychiatric and long stay patients

24. An annual census should be carried out on an agreed date on all patients who have been in mental illness/mental handicap units or hospitals for a year or more and on all detained patients (paragraph 7.3).

25. The minimum data set to be collected for the census is described (paragraph 7.4).

26. An annual return should be made about the number of detained patients admitted to hospital and the total number of changes in legal status each year (paragraph 7.12).

27. The half yearly returns of Part V patients to the Home Office should be continued (paragraph 7.14).

28. An annual return should be made about the number of ECT treatments administered (paragraph 7.17).

29. Further work is required to test the feasibility of recording all changes in legal status as part of the patient information system (paragraph 7.13).

Chapter 8
Nationally available information about bed use

30. Each region should contribute data to a single national system which will replace the three current ones, HIPE, HIPE (Maternity) and the MHE (paragraph 8.7).

31. NHS members of the Steering Group recommend that the data collated centrally should be held by the OPCS (paragraph 8.8).

32. Further work and detailed discussion should be carried out before final recommendations are made about the coverage of the system and the records to be included (paragraph 8.9); tentative proposals are put forward for discussion (paragraphs 8.10–8.16).

33. Data held at region should be edited before transmission centrally so that:

a. codes for district health authority of residence and local authority of residence are submitted and not post codes (paragraph 8.18).

b. codes for specialty are submitted and not consultant codes (paragraph 8.19).

c. general practitioner codes are not submitted (paragraph 8.20).

34. The data items to be held centrally for analysis are listed (paragraph 8.24).

35. Further work and detailed discussion are required to identify the information about maternity that should be held centrally (paragraph 8.25).

36. A standing committee should be set up to agree details concerning the transmission, analysis and output of the computerised patient information system with special regard for ensuring data protection (paragraphs 8.26 and 8.27).

37. Health authorities should not be charged for access to the data held by the OPCS (paragraph 8.28).

38. Outputs from the system and the conditions under which they would be obtained are described (paragraph 8.29).

39. The pre-specified tables to be submitted annually to the DHSS are listed (paragraph 8.30) and a mechanism for reviewing the need for pre-specified tables described (paragraph 8.31).

Chapter 9
Beds and wards

40. Each district should prepare and maintain a ward inventory, containing a minimum set of data items (paragraph 9.10) and definitions and classifications are described for the following items:

a. time availability (paragraph 9.12),

b. patient group (paragraph 9.13),

c. age and sex mix (paragraph 9.15),

d. intensity of care (paragraph 9.16), and

e. site (paragraph 9.17).

41. The SH 3 mechanism for the collection of data about bed availability and use should be discontinued (paragraph 9.24).

42. Data about bed use should be collected through the patient information system (paragraph 9.25).

43. Data about bed availability should be recorded retrospectively on daily ward listings (paragraph 9.27).

44. The collection of data about specialty bed availability should cease (paragraph 9.28).

45. Data about bed availability should be returned in terms of bed days available (paragraph 9.29).

46. A daily ward listing should record all the activity that has occurred in the previous 24 hours and the availability status of the ward (paragraph 9.31).

47. Patients who attend the ward for care and who do not require the use of a hospital bed should be called ward attenders and the number of attenders recorded (paragraph 9.32).

48. The minimum set of data to be collected on a ward listing is described (paragraphs 9.33 and 9.34).

49. Statistics about bed use should be available to a district within six weeks of the end of the collection period (paragraph 9.36).

50. Statistics about bed occupancy should not be used as an indicator of the efficient use of beds (paragraph 9.39).

51. The statistics required for region and DHSS are described (paragraphs 9.43 and 9.44).

Chapter 10
Consultant out-patient clinics

52. The minimum data set to be collected about each clinic is described (paragraph 10.20).

53. Computerised out-patient information systems should be developed and widely introduced (paragraph 10.17).

54. A minimum data set for a computerised out-patient system is described (paragraph 10.25).

55. A classification for the data item, source of initial attendance, is described (paragraph 10.26).

56. The statistics required for region and DHSS are described (paragraphs 10.27 and 10.28).

57. Further work is required to develop:

a. a better unit of resource than session (paragraph 10.4).

b. definitions and methods of data capture to allow information about the two types of first attender to be obtained (paragraph 10.14).

c. methods to obtain detailed information about out-patient attenders who are heavy users of resources (paragraph 10.18), and

d. sampling methods to obtain diagnostic and other information (paragraph 10.19).

Chapter 11
Demand for hospital facilities

58. As a minimum, information should be available about the demand for out-patient clinic appointments and that for elective admission (paragraph 11.3).

59. Lists for elective admission should be reviewed regularly to remove patients no longer needing to be admitted and the number removed for any reason other than elective admission recorded (paragraph 11.12).

60. The data items to be collected about the expressed and unmet demand for out-patient clinics are described (paragraph 11.18).

61. The data items to be collected about the expressed and unmet demand for elective admissions are described (paragraph 11.20).

62. Patient administration systems should be able to produce information about patients awaiting admission and the minimum data set to be collected is described (paragraph 11.22).

63. A classification for the following data items is described:

a. offer of admission (paragraph 11.23), and

b. reason for removal from a waiting list (paragraph 11.24).

64. The statistics required for region and DHSS are described (paragraph 11.26).

65. Further work is required to:

a. develop a statistic measuring the time spend waiting for an out-patient appointment (paragraph 11.15), and

b. review methods of collecting data about total waiting time and to assess its usefulness as a measure of demand (paragraph 11.17).

Chapter 12
Operating theatres

66. The minimum data set to be collected about operating theatres is described (paragraph 12.8).

67. The statistics required for region and DHSS are described (paragraph 12.11).

68. Further work is required to develop a better unit of resource than session (paragraph 12.6).

Chapter 13
NHS day care facilities

69. Each district should have information about the availability and use of all the day care facilities in its locality (paragraph 13.6).

70. The minimum data set to be collected about day care facilities is described (paragraph 13.10).

71. A classification of day care facilities is described (paragraph 13.11).

72. The statistics required for region and DHSS are described (paragraph 13.13).

Chapter 14
Accident and emergency departments

73. A record or register should be kept in each department (paragraph 14.7).

74. The minimum data set to be collected about an accident and emergency department is described (paragraph 14.9).

75. Computerised information systems should be developed and introduced widely (paragraph 14.10).

76. A minimum data set for a computerised accident and emergency information system is described (paragraph 14.11).

77. Classifications for the following data items are described:

a. initiator of attendance (paragraph 14.12),

b. mode of arrival (paragraph 14.13),

c. patient group (paragraph 14.14),

d. type of incident (paragraph 14.15), and

e. method of departure (paragraph 14.16).

78. The statistics required for region and DHSS are described (paragraphs 14.18 and 14.19).

79. The type of accident should be identified by the use of ICD E codes for all patients on the patient information system who have had an accident (paragraph 14.20).

80. Central government departments who require information about specific types of accident should mount centrally funded surveys using a sample of accident and emergency departments (paragraph 14.22).

81. Further work is required to develop a minimum data set for each of the major types of accident and to agree a common method for classifying diagnoses (paragraph 14.23).

Chapter 15
Diagnostic departments

82. A regular inventory of the resources available to each department should be made and the minimum data set is described (paragraphs 15.10 and 15.11).

83. The management data to be recorded on request forms are described (paragraph 15.14).

84. Within hours and out of hours requests should be recorded separately (paragraph 15.16).

85. The basic statistical measure of activity should be the number of requests received (paragraph 15.18).

86. Where feasible, requests that consume broadly equivalent resources should be grouped (paragraph 15.20).

87. For pathology departments, the minimum data to be collected should be the number of requests (paragraphs 15.26 and 15.27).

88. For radiology departments, the examinations should be classified into six groups (paragraph 15.33).

89. For radiology departments, the number of requests for each group of examinations should be identified (paragraph 15.34).

90. Nuclear medicine procedures should be grouped in a similar way to radiology (paragraph 15.37).

91. For nuclear medicine, the number of requests for each group of procedures should be identified (paragraph 15.38).

92. Data should be collected routinely about requests for electrocardiograms, electro-encephalograms and pulmonary function tests (paragraph 15.39).

93. The data to be collected about electrocardiograms are described (paragraphs 15.40 and 15.41).

94. The data to be collected about electro-encephalograms are described (paragraph 15.42).

95. The data to be collected about respiratory function tests are described (paragraph 15.44).

96. The statistics required for district management are described (paragraph 15.45).

97. The statistics required for region and DHSS are described (paragraphs 15.47 and 15.48).

98. Further work is required to develop:

a. cost control techniques for diagnostic departments (paragraph 15.26), and

b. linkages between diagnostic department computers and patient administration systems (paragraph 15.46).

Annex I

Composition of the Steering and other Groups

1 The Steering Group

The following are or have been members of the Steering Group; former members are shown with an asterisk:

Mr D de Peyer, Under Secretary, DHSS.

Mr J Elkington, Consultant, Birkenhead (for Joint Consultants Committee).

Dr J Evans, Deputy Chief Medical Officer, DHSS.

Mr M Fairey, Regional Administrator, North East Thames RHA.

Mr G Greenwood, District Treasurer, Wirral DHA (from May 1982).

Dr M Goldacre, Specialist in Community Medicine, Oxford RHA.

Dr G Guest, Regional Management Services Officer, Wessex RHA.

Professor W Holland, Department of Community Medicine, St. Thomas' Hospital, London.

Dr A Jennings, Consultant, Northampton (from July 1980 for Joint Consultants Committee).

Miss J Jones, Regional Nursing Officer, West Midlands RHA.

Mr R Jones, District Administrator, Frenchay DHA.

Mrs E Körner, Vice Chairman, South Western RHA. (Chairman).

*Mr R Lawrence, Area Treasurer, Wirral AHA (to April 1982).

*Mr R Myall, Regional Treasurer, North West Thames RHA (to April 1982).

Mr D Pace, Regional Treasurer, South West Thames RHA (from May 1982).

Mrs A Poole, Deputy Chief Nursing Officer, DHSS (from September 1981).

*Dr R Rowe, Area Medical Officer, Dorset AHA (to April 1982).

*Dr C Scurr, Consultant, Westminster Hospital (to June 1980 for Joint Consultants Committee).

Mr A Smith, Director of Statistics and Research, DHSS.

Mr R Thatcher, Registrar General, OPCS.

Dr W Turner, Regional Medical Officer, Yorkshire RHA.

*Miss P Wright-Warren, Deputy Chief Nursing Officer, DHSS (to August 1981).

The Secretariat is provided by:

Mr M Dunning, Principal, DHSS.

Mr C Hogan, Statistician, DHSS.

Dr A Mason, Senior Medical Officer, DHSS.

2 Working Groups A (Hospital Clinical Activity)

The following were associated with the work of these Groups; the job titles refer to the posts held when the work was in progress:

Miss P Annesley, Statistician, DHSS.

Dr J Ashley, Senior Medical Officer, OPCS.

Mr S Barron, Newcastle (for Royal College of Obstetricians and Gynaecologists).

Dr T Bewley, London (for Royal College of Psychiatrists).

Mr G Boulton, Area Planning Officer, Salop AHA.

Professor J Cooper, Nottingham (for Royal College of Psychiatrists).

Dr D Costain, Medical Officer, DHSS.

Mr K Cottrell, Regional Statistician, North Western RHA.

Mr R Cubitt, Principal, DHSS.

Mr R Deighton, Principal, DHSS.

Professor J Dennis, Southampton (for Royal College of Obstetricians and Gynaecologists).

Mr D de Peyer, Under-Secretary, DHSS.

Dr P Dunn, Bristol (for British Paediatric Association).

Mr J Elkington, Birkenhead (for Joint Consultants Committee).

Mrs R Farebrother, Salop AHA (for Royal College of Midwives and Central Midwives Board).

Dr A Fenton Lewis, Senior Medical Officer, DHSS.

Mrs P Folger, Principal, DHSS.

Dr M Goldacre, Specialist in Community Medicine, Oxford RHA.

Miss I Gordon, Nursing Officer, DHSS.

Mr A Healey, Principal, DHSS.

Professor W Holland, Department of Community Medicine, St Thomas' Hospital, London.

Dr A Jennings, Northampton (for Joint Consultants Committee).

Miss D Juniper, District Nursing Officer, N Derbyshire Health District.

Miss A King, Nursing Officer, DHSS.

Mr D King, District Administrator, Exeter Health Care District.

Mr E Ko, Statistician, DHSS.

Miss A Macfarlane, National Perinatal Epidemiology Unit, Oxford.

Dr A Mason, Steering Group Secretariat.

Dr J Metters, Senior Medical Officer, DHSS.

Dr J Modle, Senior Medical Officer, DHSS.

Mr R Myall, Regional Treasurer, North West Thames RHA.

Mr E O'Connor, District Nursing Officer, West Birmingham Health District.

Mr A Perkins, Regional Statistician, North West Thames RHA.

Dr D Pickersgill, Norfolk (for General Medical Services Committee of the BMA).

Dr G Pincherle, Senior Medical Officer, DHSS.

Mr D Poynton, Area Treasurer, Coventry AHA.

Mr T Rippington, Regional Treasurer, South Western RHA.

Mr J Rowntree, Chief Statistician, DHSS.

Mr F Sargeant, Patient Service's Officer, Bristol and Weston Health District.

Dr A Sippert, Principal Medical Officer, DHSS.

Dr J Stead, Haywards Heath (for Royal College of Psychiatrists).

Mr J Tait, Principal Nursing Officer, DHSS.

Mr G Taylor, Principal, DHSS.

Dr J Todd, Area Medical Officer, Dudley AHA.

Mrs L Wainwright, Research Associate, King Edward's Hospital Fund.

Dr C Walker, Consultant, Dundee (for British Paediatric Association).

Dr L Zander, London (for Royal College of General Practitioners).

The Chairmen of the eight groups which carried out the work were Dr Ashley, Dr Todd, Dr Goldacre and Mr King.

3 Working Group B (Diagnostic Services)

The following were associated with the work of this Group; the job titles refer to the post held when the work was in progress:

Miss P Annesley, Statistician, DHSS.
Mr M Callingham, District Finance Officer, Southampton Health District.
Dr C Dulake, Consultant Microbiologist, PHLS, Dulwich Hospital.
Mr M Dunning, Steering Group Secretariat.
Mr M Fairey, Regional Administrator, North East Thames RHA (Chairman).
Dr G Guest, Regional Management Services Officer, Wessex RHA.
Mr M Harlow, Principal, DHSS.
Professor G Jenkins, Consultant Haematologist, The London Hospital.
Mr R Jones, District Administrator, Frenchay Health District.
Ms R O'Brien, Senior Executive Officer, DHSS.
Dr M Rinsler, Consultant Chemical Pathologist, Northwick Park Hospital.
Dr G Slavin, Consultant Histopathologist, Northwick Park Hospital.
Dr M Ward, Consultant Radiologist, Harrogate General Hospital.
Dr I Wickings, Project Co-ordinator, CASPE Research.
Dr P Woodford, Principal Scientific Officer, DHSS.
Dr R Wrighton, Senior Medical Officer, DHSS.

4 Piloting and Feasibility Steering Group

During the piloting of the recommendations of Working Groups A and B, the following were members of the Group; the job titles refer to the posts held when the work was in progress:

Miss P Annesley, Statistician, DHSS.
Dr J Ashley, Senior Medical Officer, OPCS.
Mr P Chubb, District Administrator, South Birmingham Health District (Chairman).
Mr K Cottrell, Regional Statistician, North Western RHA.
Mr M Court, Associate District Administrator, Exeter Health Care District.
Mr A Dickinson, General Administrator, Hereford Health District.
Mr M Dunning, Steering Group Secretariat.
Mr H Foster, District Administrator, North Tees Health District.
Dr G Guest, Regional Management Services Officer, Wessex RHA.
Mr G Martin, Information Officer, South Birmingham Health District.
Dr A Mason, Steering Group Secretariat.
Mr J Rowntree, Chief Statistician, DHSS.
Mr M Slattery, Regional Statistician, Wessex RHA.
Mrs L Wainwright, Pilot Studies Co-ordinator, Steering Group Secretariat.

Annex II

Implementation resource consequences and timetable

Introduction

1. The resource consequences of our proposals cannot be assessed without consideration of the other major changes currently occurring in the NHS. On the one hand, the restructuring exercise and the major emphasis being placed on the accountability of health authorities have lead to new information requirements which we have tried to anticipate in our recommendations. On the other, the enhancement of mainframe machines by small local computers and the need to rewrite computer software will occur regardless of whether our proposals are implemented. Our recommendations are aimed to complement these changes, to provide the information required for the new style of health service management and to assist the orderly and cost-effective implementation of new computer systems. It is thus very difficult to identify what costs are attributable to our proposals over and above those incurred by these other developments. The benefits from the new management arrangements will only accrue if better information is available to health service managers.

Commissioned work

2. Throughout our work we have kept in close touch with NHS personnel in order to ensure that it is possible to implement our recommendations on a national basis. To obtain estimates of any costs arising from implementation we commissioned the following work:

a. A study done by the DHSS Central Management Services to develop a methodology for costing information services.

b. Regional statisticians were asked to prepare an estimate for each region of the cost of implementing our recommendations.

c. In piloting these recommendations an attempt was made to assess the resources that might be required.

3. None of this work has been entirely satisfactory. The methodology developed by Central Management Services was not well received by the NHS Regional Management Services Officers and has not been used. It has proved to be extremely difficult to make regional estimates of the cost of implementation and only one formal reply has been received. Although the pilot studies were of assistance, not all recommendations needed piloting, collection systems were not changed and the currently required statutory statistics were collected as well as the new data.

Information in the NHS

4. Any formal attempt to obtain a realistic estimate of the likely resource consequences of our recommendations for the NHS is hampered by a number of factors, namely:

a. The cost of present information systems is not known.

b. An agreed acceptable methodology for costing information is not available.

c. Regions and districts have developed their systems to differing degrees.

d. Regions and districts are at very different stages with regard to the development of computer based systems.

e. Many regions and districts are about to make changes to their information systems particularly with regard to the introduction of district patient administration systems. These are being introduced primarily to improve operational management; the provision of better information is a by-product of this process.

f. The cost of implementation will be affected by the speed with which it occurs. Costs will be minimised if implementation of our recommendations occurs at the same time as the changes noted at e.

5. Despite these difficulties we have tried to assess the consequences of implementing the proposals in this Report over a four year period 1983/1984 to 1986/1987. They should be divided into two components:

a. the consequences of implementation, and

b. the consequences of running the new systems on a permanent basis.

6. In reviewing the consequences of and timetable for implementation of our proposals it is useful to distinguish between:

a. Recommendations made about the new facility returns (in Chapters 9–15). These do not necessarily need to be computerised.

b. Recommendations concerning the patient information system for all patients using a hospital bed (Chapters 4–8).

New facility returns

7. Returns are submitted currently for all the facilities and services described in this Report except for operating theatres. The data required for the operating theatre return however are collected in most districts and the only additional work will be the regular collation of data from the theatre register. The data required about wards, although more detailed than that collected from the SH 3 return, will be considerably easier to collate as the estimation of specialty bed availability is being stopped and bed use data will be obtained from the patient information system.

8. There are marginal increases to the data required about out-patient clinics and day care facilities but these recommendations did not require extra resources in the districts who piloted them. There has been no change to the minimum set of data collected about accident and emergency departments. The collection of data from diagnostic departments, to provide information about the specialty ordering the request, required extra resources in the piloting exercise but the value of the information was felt to justify this increase.

9. The rapid development and implementation of district computer systems to improve the operational management of the facilities and departments noted in paragraphs 7 and 8 will provide not only the minimum data set but also the recommended good practice extensions cheaply and efficiently. The data required about wards and out-patient clinics can be obtained from a computerised patient administration system. The extent of computerisation in a district will thus affect the cost of running our new systems.

10. There will be an initial cost at district level of implementing the recommendations and setting up systems, either manual or computerised, to collect and process the data. However, once the systems are running we consider that in a well managed district there should be no extra cost, and with computerisation there should be savings. This opinion has been confirmed by a number of NHS staff who have carefully assessed the implications of our recommendations for their district. It must be noted that some districts have so few resources currently available for data collection and processing that they are unable to fulfil adequately the current requirements.

11. Regions will take over the responsibility for preparing the facility returns for the DHSS. This task should not require extra resources as regional summaries of clinical activity data are currently prepared by all regions. Extra work may be caused by the transfer of responsibility from the DHSS to regions for validating the data.

12. Initial discussions with health service officers suggest that it would be possible to start collecting data in the way that we have recommended from April 1983. This target will be given to the group which is being set up to plan the implementation phase of our work.

The patient information system

13. The patient information system brings together parts of four current systems, the SH 3 return, Hospital Activity Analysis, the Mental Health Enquiry and the maternity component of the Hospital In-Patient Enquiry. It is a computerised system which can be processed at district or regional level. In considering the resource consequences and timetable for implementing the recommendations concerning the patient information system, it is helpful to divide the latter into a number of components:

a. the collection of data about general and psychiatric patients,

b. the collection of data about maternity patients and neonates,

c. the processing of data about general patients,

d. the processing of data about psychiatric patients, and

e. the processing of data about maternity patients and neonates.

14. Data about general and psychiatric patients are currently recorded and collected in all districts for the SH 3 return, HAA and the MHE. Our recommendations will simplify current procedures and permit the same system to be used for both types of patient. After initial system changes, the unified system should be considerably cheaper to run than three separate systems.

15. Only a few districts currently collect data about all maternity patients, but the majority of districts collect data for a computerised child health system. The extra cost of running the maternity component of the patient information system should be negligible if the same data are used to trigger the child health system. We have commissioned pilot studies in seven districts to explore the best ways of achieving this.

16. Each region will have to decide whether the initial computer processing of data for the patient information system is done at district or regional level. Some have already decided on the former strategy and are putting patient administration systems into all their districts. As noted previously this is being done to improve operational management; the information obtained being a by-product of this process.

17. Wherever initial processing is carried out, regions will have to make changes to their regional computing systems. They will have to:

a. Re-write the current HAA programs in line with our recommendations. A number of regions would have to do this anyway as programs were nearing the end of their useful existence.

b. Extend their regional system to include psychiatric patients. The DHSS currently processes the MHE and, when this ceases, funds should be made available to regions to take over this task.

c. Extend the regional system to include maternity patients. This will be a new function for the majority of regions.

18. It has proved impossible in most regions to estimate the cost of either the implementation or the running of the patient information system. In some regions major changes are already being instituted, in others strategic decisions have still to be made. Most regions have informed us that changes would have had to occur even if there were to be no changes in the data collected. One region has stated that as long as the implementation timetable is realistic, there will be no significant additional cost for obtaining the data required; this region is putting patient administration systems in all its districts.

19. A factor in determining the cost of the changes which are proposed will be the timetable set for implementing the patient information system. After consultation with health service officers we have decided to suggest the following target dates for consideration by the implementation group:

a. The last regions to start the collection of data for general and psychiatric patients in the recommended way in January 1985.

b. The last regions to start the collection of data for maternity patients in January 1986.

Summary

20. Although it has been possible to identify most of the factors which will have a bearing on the resource consequences of implementing and running the new systems, it has not proved possible to quantify them. The most significant cost will be caused by regions having to change the regional computing systems. At district level with appropriate changes in organisation it should be possible to run the new systems without significant extra cost.

Annex III

Current hospital statistical returns which will be replaced

1. The following returns which are currently submitted to the DHSS are covered by recommendations contained in this Report and will cease to be operational when the new systems are introduced:

a. SH9, contractual arrangements;

b. SBH 6, pathology statistics;

c. SBH 13 A, B, C, legal status on admission, on leaving and as at 31 December;

d. SBH 203, in-patient waiting list;

e. SBH 208, psychosurgery;

f. SBH 211, private facilities and patients in NHS hospitals; and

g. LHS 27/1, birth notifications and low birth weight reports.

2. The following returns are partly covered by the recommendations contained in this Report, and the sections noted below will cease to be operational when the new systems are introduced:

a. SH 3, hospital statistics:
  i. EDP4 and 5, in-patients, day cases and out-patients;
  ii. EDP6 A and B, maternity facilities and births;
  iii. EDP6 C, radiological departments;
  iv. EDP6 D, day care units;
  v. EDP6 E and F, regular day and night patients;
  vi. Part of EDP6 I, ancillary departments relating to diagnostic services and ECT.

b. SBH 112 A, B and C, psychiatric facilities return, the sections concerning the use of facilities and minimum standards.

3. Hospital returns and parts of returns not covered by recommendations in this Report, but which the Steering Group are or will be shortly reviewing, are:

a. SH 3 section EDP6 G, radiotherapy;

b. SH 3 section EDP6 H, physiotherapy;

c. SH 3 section EDP6 I, other ancillary departments;

d. SBH 19, the hospital eye service; and

e. part of SBH 112 A, B, C, the sections dealing with health service manpower working in psychiatric facilities.

Annex IV

National vocabulary for diagnostic services

Introduction

1. The recommendations in Chapter 15 describe the usefulness of measures which reflect the differential costs of diagnostic investigations. This Annex identifies groups of examinations which equate broadly in cost terms for services where this approach is feasible on a national basis, i.e. radiology, nuclear medicine and electrocardiography.

2. The range of costs of each group is bound to vary between districts: the possibility of attaching broad national costs is being investigated.

3. There are advantages in the use of codes to identify specific procedures. Sets of numeric codes are included for radiology and nuclear medicine. Use of these within computer-based systems would facilitate the collation of data from different departments to aid national research and ad hoc enquiries. For local use alpha codes may be more appropriate, and individual departments may find it useful to devise such codes for their own purposes.

Radiology services (including ultrasound)

4. Individual procedures have been classified into six groups. Two schedules are provided, one groups the procedures (Schedule A), the other is presented in alphabetical order (Schedule B). A numeric code has been assigned to each procedure.

5. The need to conduct procedures outside a department may use additional radiographer time, but conversely it may save the time of nursing and other staff. It may be useful on occasions for internal management or other local purposes to identify such activity separately. Particular arrangements can be introduced as the need arises; one possible method would be to record in the day book or other local record a suffix or other identifying feature against the group letter for that procedure.

6. Similarly, procedures may take longer to carry out (and thus consume additional resources) on certain categories of patients who for physical or other reasons cannot co-operate fully. Knowledge of the specialty of the clinician making the request will give an indication of the patients seen. Where more precise information is required it may be possible to identify such patients in the way described in the preceding paragraph.

7. Where a single request is for more than one procedure or where, at the radiologist's discretion, more than one procedure (as distinct from repeat or multiple views during the same procedure) is carried out to meet a single request, each procedure should be recorded.

8. Where examination involves the simultaneous use of two or more procedures which are classified in different groups, the highest classification should be recorded.

Nuclear medicine

9. Individual procedures have been classified into four groups. Two separate schedules (Schedules C and D) are provided and numeric codes have been assigned. The link with the equivalent radiological groups is indicated on schedule C. The schedules can therefore be used either when isotope procedures are undertaken in a radiology department, or if the work is undertaken in a separate department.

Electrocardiography

10. There are three main investigations available. To reflect resource use they can be assigned to two groups, but they do not relate to the groups identified for radiology and nuclear medicine. The investigations in each group are as follows:

a. Group A comprises routine electrocardiograms.

b. Group B comprises ambulatory ECG monitoring and exercise electrocardiograms.

Schedule A: Radiology services

The following schedule identifies the radiological procedures in each of the six groups.

GROUP A

Code	
101	Abdomen, single view
102	Acromio-clavicular joint
103	Ankle
104	Chest, single view
105	Clavicle
106	Coccyx
107	Elbow
108	Femur
109	Finger or fingers of one hand
110	Foot
111	Foreign body, demonstration
112	Hand
113	Hips, single view
114	Humerus
115	Knee
116	Larynx
117	Localisation of treatment field
118	Mandible, single view
119	Nasal bones
120	Os calcis
121	Patella
122	Pathological specimen
123	Pelvis, single view
124	Post-nasal space
125	Radius and ulna
126	Sacro-iliac joints
127	Sacrum
128	Salivary glands
129	Scaphoid
130	Scapula
131	Shoulder
132	Sinuses and antra, single view
133	Skull, single view
134	Spine, one anatomical area
135	Sterno-clavicular joint
136	Sternum
137	Teeth, up to 2 films
138	Teeth, occlusal film
139	Thoracic inlet
140	Thumb
141	Tibia and fibula
142	Toe or toes of one foot
143	Wrist

GROUP B

201	Abdomen, multiple views
202	Chest, multiple views
203	Cholangiography, post-operative
204	Cholecystography
205	Facial bones
206	Fluoroscopy with mobile image intensifier
207	Hips, multiple views
208	Mammography
209	Mandible, multiple views
210	Mastoids
211	Nasal passages
212	Nephrostogram
213	Orthopaedic measurement
214	Pelvimetry
215	Pneumothorax, diagnostic
216	Shuntography
217	Skull, multiple views and special projections
218	Small bowel biopsy
219	Spine, more than one anatomical area
220	Teeth, more than 2 films
221	Teeth, panoramic tomography
222	Temporo-mandibular joints
223	Ultrasound, obstetric (except amniocentesis)

GROUP C

301	Cholangiography, operative
302	Cystography
303	Cystometrography
304	Cysto-urethrography
305	Dacrocystography

306 Endoscopy
307 Facial bones with external fixation
308 Foreign body localisation
309 Gastro-intestinal tract, upper
310 Gastro-intestinal tract, small bowel
311 Hip pinning
312 Hysterosalpingography
313 Intra-uterine transfusion
314 Kidney, exposed
315 Laryngography
316 Mammary ductography
317 Meatography
318 Phenol injection under X-ray control
319 Renal cyst aspiration
320 Retrograde pyelography
321 Sialography
322 Sinography
323 Skeletal survey
324 Tomography, as a separate examination
325 Urethrography

GROUP D

401 Amniography
402 Arteriography, single vessel
403 Arthrography
404 Biopsy under fluoroscopic control
405 Bronchography
406 Cholangiography, infusion
407 Cholangiography, intravenous
408 Cholangiography, percutaneous
409 Excretion urography
410 Gastro-intestinal tract, upper *and* small bowel
411 Gastro-intestinal tract, lower
412 Gynaecography
413 Lumbar radiculography
414 Phlebography, limb
415 Stereotaxis
416 Trigeminal injection under X-ray control
417 Ultrasound, amniocentesis
418 Ultrasound, non-obstetric
419 Ventriculography

GROUP E

501 Aortography
502 Arteriography, multiple vessels
503 Biliary endoprosthesis
504 Cardiac catheterisation
505 Discography
506 Insertion of pacemaker
507 Lymphangiography
508 Myelography
509 Nephrostomy
510 Phlebography, other than limb
511 Programme stimulation study
512 Retrograde cholangio-pancreatography
513 Stone removal

GROUP F

601 Angiocardiography
602 Angioplasty
603 Arteriography, spinal
604 Computed tomography
605 Coronary angiography
606 Embolisation
607 Encephalography
608 Pituitary implant

Schedule B: Radiology services

The following schedule provides a list of radiological procedures in alphabetical order.

Code No	Procedure	Group
101	Abdomen, single view	A
201	Abdomen, multiple views	B
102	Acromio-clavicular joint	A
401	Amniography	D
601	Angiocardiography	F
602	Angioplasty	F
103	Ankle	A
501	Aortography	E
402	Arteriography, single vessel	D
502	Arteriography, multiple vessels	E
603	Arteriography, spinal	F
403	Arthrography	D
503	Biliary endoprosthesis	E
404	Biopsy under fluoroscopic control	D
405	Bronchography	D
504	Cardiac catheterisation	E
104	Chest, single view	A
202	Chest, multiple views	B
406	Cholangiography, infusion	D
407	Cholangiography, intravenous	D
301	Cholangiography, operative	C
408	Cholangiography, percutaneous	D
203	Cholangiography, post-operative	B
204	Cholecystography	B
105	Clavicle	A
106	Coccyx	A
604	Computed tomography	F
605	Coronary angiography	F
302	Cystography	C
303	Cystometrography	C
304	Cysto-urethrography	C
305	Dacrocystography	C
505	Discography	E
107	Elbow	A
606	Embolisation	F
607	Encephalography	F
306	Endoscopy	C
409	Excretion urography	D
205	Facial bones	B
307	Facial bones with external fixation	C
108	Femur	A
109	Finger or fingers of one hand	A
206	Fluoroscopy with mobile image intensifier	B
110	Foot	A
111	Foreign body, demonstration	A
308	Foreign body, localisation	C
309	Gastro-intestinal tract, upper	C
310	Gastro-intestinal tract, small bowel	C
410	Gastro-intestinal tract, upper *and* small bowel	D
411	Gastro-intestinal tract, lower	D
412	Gynaecography	D
112	Hand	A
311	Hip pinning	C
113	Hips, single view	A
207	Hips, multiple views	B
114	Humerus	A
312	Hysterosalpingography	C
506	Insertion of pacemaker	E
313	Intrauterine transfusion	C
314	Kidneys, exposed	C
115	Knee	A
315	Laryngography	C
116	Larynx	A
117	Localisation of treatment field	A
413	Lumbar radiculography	D
507	Lymphangiography	E
316	Mammary ductography	C
208	Mammography	B
118	Mandible, single view	A
209	Mandible, multiple views	B

Code No	Procedure	Group
210	Mastoids	B
317	Meatography	C
508	Myelography	E
119	Nasal bones	A
211	Nasal passages	B
212	Nephrostogram	B
509	Nephrostomy	E
213	Orthopaedic measurement	B
120	Os calcis	A
121	Patella	A
122	Pathological specimen	A
123	Pelvis, single view	A
214	Pelvimetry	B
318	Phenol injection under X-ray control	C
414	Phlebography, limb	D
510	Phlebography, other than limb	E
608	Pituitary implant	F
215	Pneumothorax, diagnostic	B
124	Post-nasal space	A
511	Programme stimulation study	E
125	Radius and ulna	A
319	Renal cyst aspiration	C
512	Retrograde cholangio-pancreatography	E
320	Retrograde pyelography	C
126	Sacro-iliac joints	A
127	Sacrum	A
128	Salivary glands	A
129	Scaphoid	A
130	Scapula	A
131	Shoulder	A
216	Shuntography	B
321	Sialography	C
322	Sinography	C
132	Sinuses and antra, single view	A
323	Skeletal survey	C
133	Skull, single view	A
217	Skull, multiple views and special projections	B
218	Small bowel biopsy	B
134	Spine, one anatomical area	A
219	Spine, more than one anatomical area	B
415	Stereotaxis	D
135	Sterno-clavicular joint	A
136	Sternum	A
513	Stone removal	E
137	Teeth, up to 2 films	A
220	Teeth, more than 2 films	B
138	Teeth, occlusal film	A
221	Teeth, panoramic tomography	B
222	Temporo-mandibular joints	B
139	Thoracic inlet	A
140	Thumb	A
141	Tibia and fibula	A
142	Toe or toes of one foot	A
324	Tomography, as a separate examination	C
416	Trigeminal injection under X-ray control	D
325	Urethrography	C
417	Ultrasound, amniocentesis	D
418	Ultrasound, non-obstetric	D
223	Ultrasound, obstetric (except amniocentesis)	B
419	Ventriculography	D
143	Wrist	A

Schedule C: Nuclear medicine services

The following schedule identifies the nuclear medicine procedures in each of the four groups.

GROUP II; comparable with Group B radiological procedures

251 Bone scan – single view
252 CSF shuntography
253 Ectopic gastric mucosa localisation
254 Glomerular filtration rate
255 Iodine uptake
256 Lacrimal drainage scan
257 Liver-spleen scan
258 Plasma volume
259 Red cell mass
260 Renogram
261 Residual urine volume
262 Salivary gland scan
263 Spleen scan
264 Static renal scan
265 Thrombus localisation
266 Thyroid scan

GROUP III; comparable with Group C radiological procedures

351 Blood pool scan
352 Bone scan – whole body
353 Bone marrow scan
354 Brain scan
355 C^{14} gastro-intestinal function test
356 Cerebral blood flow
357 Dynamic renal scan
358 Extra-cellular fluid volume
359 First pass cardiac angiogram
360 Gastric emptying
361 Gastro-intestinal blood loss
362 Gastro-intestinal protein loss
363 Gastro-oesophageal reflux
364 Hepato-biliary scan
365 I^{131} therapy
366 Lung perfusion scan
367 Lung ventilation scan
368 Lymph node scan
369 Red blood cell survival
370 Testicular scan
371 Total body water
372 Venography
373 Vitamin B_{12} absorption test

GROUP IV; comparable with Group D radiological procedures

451 Cardiac equilibrium blood pool imaging
452 Cisternography
453 Duodeno-gastric reflux
454 Ferrokinetics
455 Gastric emptying (dual isotope)
456 Gastro-intestinal bleeding localisation
457 Lung ventilation and perfusion scan
458 Myocardial perfusion scan without stress
459 P^{32} therapy
460 Radionuclide cavity therapy
461 Radionuclide synovectomy
462 Red blood cell sequestration
463 Total exchangeable potassium
464 Total exchangeable sodium
465 Vesico-ureteric reflux
466 Whole body I^{131} imaging

GROUP VI; comparable with Group F radiological procedures

651 Adrenal scan
652 Cardiac equilibrium blood pool scan with stress
653 Myocardial perfusion with stress
654 Platelet localisation
655 Single photon emission tomography
656 White cell localisation
657 Whole body Ga^{67} scan

Schedule D: Nuclear medicine services

The following schedule provides a list of nuclear medicine procedures in alphabetical order.

Code No	Procedure	Group
651	Adrenal scan	VI
351	Blood pool scan	III
353	Bone marrow scan	III
251	Bone scan – single view	II
352	Bone scan – whole body	III
354	Brain scan	III
355	C^{14} gastro-intestinal function test	III
451	Cardiac equilibrium blood pool imaging	IV
652	Cardiac equilibrium blood pool scan with stress	VI
356	Cerebral blood flow	III
452	Cisternography	IV
252	CSF shuntography	II
453	Duodeno-gastric reflux	IV
357	Dynamic renal scan	III
253	Ectopic gastric mucosa localisation	II
358	Extra-cellular fluid volume	III
454	Ferrokinetics	IV
359	First pass cardiac angiogram	III
360	Gastric emptying	III
455	Gastric emptying (dual isotope)	IV
456	Gastro-intestinal bleeding localisation	IV
361	Gastro-intestinal blood loss	III
362	Gastro-intestinal protein loss	III
363	Gastro-oesophageal reflux	III
254	Glomerular filtration rate	II
364	Hepato-biliary scan	III
365	I^{131} therapy	III
255	Iodine uptake	II
256	Lacrimal drainage scan	II
257	Liver-spleen scan	II

Code No	Procedure	Group
366	Lung perfusion scan	III
367	Lung ventilation scan	III
457	Lung ventilation and perfusion scan	IV
368	Lymph node scan	III
458	Myocardial perfusion scan without stress	IV
653	Myocardial perfusion with stress	VI
459	P^{32} therapy	IV
258	Plasma volume	II
654	Platelet localisation	VI
460	Radionuclide cavity therapy	IV
461	Radionuclide synovectomy	IV
462	Red blood cell sequestration	IV
369	Red blood cell survival	III
259	Red cell mass	II
260	Renogram	II
261	Residual urine volume	II
262	Salivary gland scan	II
655	Single photon emission tomography	VI
263	Spleen scan	II
264	Static renal scan	II
370	Testicular scan	III
265	Thrombus localisation	II
266	Thyroid scan	II
371	Total body water	III
463	Total exchangeable potassium	IV
464	Total exchangeable sodium	IV
372	Venography	III
465	Vesico-ureteric reflux	IV
373	Vitamin B_{12} absorption test	III
656	White cell localisation	VI
657	Whole body Ga^{67} scan	VI
466	Whole body I^{131} imaging	IV

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ISBN 011 320816 2